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Westinghouse

ORNAMENTAL STREET LIGHTING

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Westinghouse

Ornamental Street Lighting Equipment

Catalogue 8-B
June, 1925

Westinghouse Electric & Manufacturing Company
George Cutter Works
South Bend, Indiana

NOTE

THIS catalogue covers equipment for *Ornamental* Street Lighting only. Full information concerning Westinghouse *Overhead* Street Lighting Equipment is contained in Catalogue 8-A, which may be obtained from any Westinghouse District Office.

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ORNAMENTAL STREET LIGHTING

Ornamental street lighting is the paramount attainment in city beautification. It expresses art and economy, progress and morality, safety and comfort as the prime issues of a city or town government. A suitable installation of ornamental street lighting accomplishes an aesthetic purpose as well as a practical one. It encourages civic betterment and stimulates business activity. By day it improves the appearance of a city's streets by eliminating the need for unsightly overhead wires with their accompanying wooden poles. By night it provides a pleasing and attractive illumination which attracts visitors and residents alike, but provides the maximum degree of safety for the passage of traffic along our city streets. The city that does not provide adequate street lighting is shirking its most important moral duty as a municipality.

The selection of artistic standards is the most important consideration in the plan of an ornamental lighting system. The posts should harmonize with their surroundings, should be sturdy in construction and easy to install. Westinghouse-Cutter standards are made by pioneers in the field of outdoor electric lighting. Over a third of a century has been devoted to the design and manufacture of electrical lighting fixtures. Westinghouse street lighting standards are artistic in design. They are made of either cast iron or concrete, each type being made by the most approved manufacturing methods known to science. Standards are made in various sizes, all of the accessories being interchangeable, so that a wide degree of variety can be secured in designs of similar motifs.

Cast iron standards are made of the best quality grey iron, cast from metal patterns. This method insures accuracy of design and careful adherence to the details of ornamentation, etc.

The well known Hollowspun concrete lighting standards are a recent addition to the Westinghouse line of ornamental street lighting equipment. This type of standard is manufactured by a special centrifugal process which insures it against the inherent weaknesses of other methods of concrete post construction.

Until recently, the single-light standard has been used almost exclusively in the residential portions of cities, for park and boulevard lighting and for entrances to private grounds and public buildings. The perfection of incandescent lamps in sizes up to 25,000 lumens and the development of the Westinghouse Bi-lux refractor has made possible the installation of single-light standards in downtown business districts where hitherto two or three arc lights were needed to provide an equivalent illumination.

The advent of the Bi-lux refractor marks a new epoch in street lighting history. It has met the modern demands for economy in investment and maintenance costs and at the same time provided for the ever increasing requirements for higher intensities without the expense of decreasing the spacing of units along the street.

SINGLE-LIGHT CAST-IRON STANDARDS

ARCADIAN 15 STANDARDS*

STYLE NO. 351794

STYLE NO. 351802

STYLE NO. 351784

STYLE NO. 351788

Description	Style No.	Ship. Wt. Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351780	612	$155 00
With Standard Film Socket without Bi-lux refractor	351781	597	135 00
With Mogul Multiple Socket and Bi-lux refractor	351782	612	154 00
With Mogul Multiple Socket without Bi-lux refractor	351783	597	134 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351784	597	135 00
With Mogul Multiple Socket	351785	597	134 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351786	595	133 00
With Mogul Multiple Socket	351787	595	132 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351802	600	144 00
With Mogul Multiple Socket	351803	600	143 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351788	625	$174 00
With Standard Film Socket without Bi-lux refractor	351789	610	154 00
With Mogul Multiple Socket and Bi-lux refractor	351790	625	173 00
With Mogul Multiple Socket without Bi-lux refractor	351791	610	153 00
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351792	610	154 00
With Mogul Multiple Socket	351793	610	153 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351794	640	212 00
With Standard Film Socket without Bi-lux refractor	351795	625	192 00
With Mogul Multiple Socket and Bi-lux refractor	351796	640	211 00
With Mogul Multiple Socket without Bi-lux refractor	351797	625	191 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

ARCADIAN 12 STANDARDS*

STYLE NO. 351816

STYLE NO. 351822

STYLE NO. 351808

STYLE NO. 351810

Description	Style No.	Ship. Wt. Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351804	464	$123 00
With Standard Film Socket without Bi-lux refractor	351805	449	103 00
With Mogul Multiple Socket and Bi-lux refractor	351806	464	122 00
With Mogul Multiple Socket without Bi-lux refractor	351807	449	102 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351808	449	103 00
With Mogul Multiple Socket	353478	449	102 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351809	447	101 00
With Mogul Multiple Socket	343619	447	100 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351810	477	142 00
With Standard Film Socket without Bi-lux refractor	351811	462	122 00
With Mogul Multiple Socket and Bi-lux refractor	351812	477	141 00
With Mogul Multiple Socket without Bi-lux refractor	351813	462	121 00

Description	Style No.	Ship. Wt. Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351814	462	$122 00
With Mogul Multiple Socket	351815	462	121 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351816	492	180 00
With Standard Film Socket without Bi-lux refractor	351817	477	160 00
With Mogul Multiple Socket and Bi-lux refractor	351818	492	179 00
With Mogul Multiple Socket without Bi-lux refractor	353492	477	159 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351819	477	139 00
With Standard Film Socket without Bi-lux refractor	351820	462	119 00
With Mogul Multiple Socket and Bi-lux refractor	351821	477	138 00
With Mogul Multiple Socket without Bi-lux refractor	353501	462	118 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351822	452	112 00
With Mogul Multiple Socket	351765	452	111 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

ARCADIAN 10 STANDARDS*

STYLE NO. 351832

STYLE NO. 351835

STYLE NO. 351825

STYLE NO. 351827

Description	Style No.	Ship. Wt. Lb.	List Price
With Sol-Lux Jr. Rectilinear Globe and Canopy			
With Standard Film Socket	351823	282	$ 80 00
With Mogul Multiple Socket	351824	282	79 00
With Sol-Lux Jr. Monax Globe and Canopy			
With Standard Film Socket	351825	282	80 00
With Mogul Multiple Socket	353533	282	79 00
With Sol-Lux Jr. Monax Globe, Metal Canopy			
With Standard Film Socket	351826	280	78 00
With Mogul Multiple Socket	343628	280	77 00
With Paragon Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351827	310	120 00
With Standard Film Socket without Bi-lux refractor	351828	295	100 00
With Mogul Multiple Socket and Bi-lux refractor	351829	310	119 00
With Mogul Multiple Socket without Bi-lux refractor	351830	295	99 00

Description	Style No.	Ship. Wt. Lb.	List Price
With Paragon Jr. Monax Globe and Canopy			
With Standard Film Socket	351766	295	$100 00
With Mogul Multiple Socket	351831	295	99 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351832	315	122 00
With Standard Film Socket without Bi-lux refractor	351833	300	102 00
With Mogul Multiple Socket and Bi-lux refractor	351834	315	121 00
With Mogul Multiple Socket without Bi-lux refractor	353551	300	101 00
With Egyptian Jr. Lighting Unit			
With Standard Film Socket	351835	285	89 00
With Mogul Multiple Socket	351767	285	88 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

EDGEWATER 15 STANDARDS*

STYLE NO. 351850

STYLE NO. 351854

STYLE NO. 351840

STYLE NO. 351844

Description	Style No.	Ship. Wt. Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351836	722	$159 00
With Standard Film Socket without Bi-lux refractor	351837	707	139 00
With Mogul Multiple Socket and Bi-lux refractor	351838	722	158 00
With Mogul Multiple Socket without Bi-lux refractor	351839	707	138 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351840	707	139 00
With Mogul Multiple Socket	351841	707	138 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351842	705	137 00
With Mogul Multiple Socket	351843	705	136 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351854	730	148 00
With Mogul Multiple Socket	351855	730	147 00

Description	Style No.	Ship. Wt. Lb.	List Price
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351844	755	$178 00
With Standard Film Socket without Bi-lux refractor	351845	740	158 00
With Mogul Multiple Socket and Bi-lux refractor	351846	755	177 00
With Mogul Multiple Socket without Bi-lux refractor	351847	740	157 00
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351848	740	158 00
With Mogul Multiple Socket	351849	740	157 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351850	730	216 00
With Standard Film Socket without Bi-lux refractor	351851	735	196 00
With Mogul Multiple Socket and Bi-lux refractor	351852	750	215 00
With Mogul Multiple Socket without Bi-lux refractor	351853	735	195 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

EDGEWATER 12 STANDARDS*

STYLE NO. 351868

STYLE NO. 351874

STYLE NO. 351860

STYLE NO. 351862

Description	Style No.	Ship. Wt. Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351856	500	$127 00
With Standard Film Socket without Bi-lux refractor	351857	485	107 00
With Mogul Multiple Socket and Bi-lux refractor	351858	500	126 00
With Mogul Multiple Socket without Bi-lux refractor	351859	485	106 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351860	485	107 00
With Mogul Multiple Socket	353592	485	106 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351861	483	105 00
With Mogul Multiple Socket	353587	483	104 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351862	515	146 00
With Standard Film Socket without Bi-lux refractor	351863	500	126 00
With Mogul Multiple Socket and Bi-lux refractor	351864	515	145 00
With Mogul Multiple Socket without Bi-lux refractor	351865	500	125 00

Description	Style No.	Ship. Wt. Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351866	500	$126 00
With Mogul Multiple Socket	351867	500	125 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351868	530	184 00
With Standard Film Socket without Bi-lux refractor	351869	515	164 00
With Mogul Multiple Socket and Bi-lux refractor	351870	530	183 00
With Mogul Multiple Socket without Bi-lux refractor	353577	515	163 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351871	515	143 00
With Standard Film Socket without Bi-lux refractor	351872	500	123 00
With Mogul Multiple Socket and Bi-lux refractor	351873	515	142 00
With Mogul Multiple Socket without Bi-lux refractor	353603	500	122 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351874	490	116 00
With Mogul Multiple Socket	352522	490	115 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

EDGEWATER 10 STANDARDS*

STYLE NO. 351885

STYLE NO. 351888

STYLE NO. 351877

STYLE NO. 351879

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Jr. Rectilinear Globe and Canopy			
With Standard Film Socket	351875	360	$91 00
With Mogul Multiple Socket	351876	360	90 00
With Sol-Lux Jr. Monax Globe and Canopy			
With Standard Film Socket	351877	360	91 00
With Mogul Multiple Socket	353621	360	90 00
With Sol-Lux Jr. Monax Globe, Metal Canopy			
With Standard Film Socket	351878	358	89 00
With Mogul Multiple Socket	337920	358	88 00
With Paragon Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351879	390	131 00
With Standard Film Socket without Bi-lux refractor	351880	375	111 00
With Mogul Multiple Socket and Bi-lux refractor	351881	390	130 00
With Mogul Multiple Socket without Bi-lux refractor	351882	375	110 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Jr. Monax Globe and Canopy			
With Standard Film Socket	351883	375	$111 00
With Mogul Multiple Socket	351884	375	110 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351885	395	133 00
With Standard Film Socket without Bi-lux refractor	351886	380	113 00
With Mogul Multiple Socket and Bi-lux refractor	351887	395	132 00
With Mogul Multiple Socket without Bi-lux refractor	353633	380	112 00
With Egyptian Jr. Lighting Unit			
With Standard Film Socket	351888	365	100 00
With Mogul Multiple Socket	352523	365	99 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

COMMERCIAL 11 STANDARDS*

STYLE No. 351900

STYLE No. 351906

STYLE No. 351893

STYLE No. 352289

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351889	520	$158 00
With Standard Film Socket without Bi-lux refractor	351890	505	138 00
With Mogul Multiple Socket and Bi-lux refractor	351891	520	157 00
With Mogul Multiple Socket without Bi-lux refractor	351892	505	137 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351893	505	138 00
With Mogul Multiple Socket	353652	505	137 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351894	503	136 00
With Mogul Multiple Socket	334782	503	135 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352289	535	177 00
With Standard Film Socket without Bi-lux refractor	351895	520	157 00
With Mogul Multiple Socket and Bi-lux refractor	351896	535	176 00
With Mogul Multiple Socket without Bi-lux refractor	351897	520	156 00
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351898	520	$157 00
With Mogul Multiple Socket	351899	520	156 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351900	550	215 00
With Standard Film Socket without Bi-lux refractor	351901	535	195 00
With Mogul Multiple Socket and Bi-lux refractor	351902	550	214 00
With Mogul Multiple Socket without Bi-lux refractor	353662	535	194 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351903	515	174 00
With Standard Film Socket without Bi-lux refractor	351904	500	154 00
With Mogul Multiple Socket and Bi-lux refractor	351905	515	173 00
With Mogul Multiple Socket without Bi-lux refractor	353668	500	153 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351906	510	147 00
With Mogul Multiple Socket	353675	510	146 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

COMMERCIAL 10 STANDARDS*

STYLE NO. 351916

STYLE NO. 351919

STYLE NO. 351909

STYLE NO. 352290

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Jr. Rectilinear Globe and Canopy			
With Standard Film Socket	351907	360	$96 00
With Mogul Multiple Socket	351908	360	95 00
With Sol-Lux Jr. Monax Globe and Canopy			
With Standard Film Socket	351909	360	96 00
With Mogul Multiple Socket	353697	360	95 00
With Sol-Lux Jr. Monax Globe, Metal Canopy			
With Standard Film Socket	351910	358	94 00
With Mogul Multiple Socket	353691	358	93 00
With Paragon Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352290	395	136 00
With Standard Film Socket without Bi-lux refractor	351911	380	116 00
With Mogul Multiple Socket and Bi-lux refractor	351912	395	135 00
With Mogul Multiple Socket without Bi-lux refractor	351913	380	132 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Jr. Monax Globe and Canopy			
With Standard Film Socket	351914	380	$116 00
With Mogul Multiple Socket	351915	380	115 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351916	400	138 00
With Standard Film Socket without Bi-lux refractor	351917	385	118 00
With Mogul Multiple Socket and Bi-lux refractor	351918	400	137 00
With Mogul Multiple Socket without Bi-lux refractor	353709	385	117 00
With Egyptian Jr. Lighting Unit			
With Standard Film Socket	351919	370	105 00
With Mogul Multiple Socket	352525	370	104 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

CONTINENTAL 11 STANDARDS*

STYLE NO. 351931

STYLE NO. 351937

STYLE NO. 351924

STYLE NO. 352291

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351920		$157 00
With Standard Film Socket without Bi-lux refractor	351921		137 00
With Mogul Multiple Socket and Bi-lux refractor	351922		156 00
With Mogul Multiple Socket without Bi-lux refractor	351923		136 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351924		137 00
With Mogul Multiple Socket	352526		136 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351925		135 00
With Mogul Multiple Socket	352527		134 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352291		176 00
With Standard Film Socket without Bi-lux refractor	351926		156 00
With Mogul Multiple Socket and Bi-lux refractor	351927		175 00
With Mogul Multiple Socket without Bi-lux refractor	351928		155 00
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351929		$156 00
With Mogul Multiple Socket	351930		155 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351931		214 00
With Standard Film Socket without Bi-lux refractor	351932		194 00
With Mogul Multiple Socket and Bi-lux refractor	351933		213 00
With Mogul Multiple Socket without Bi-lux refractor	350818		193 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351934		173 00
With Standard Film Socket without Bi-lux refractor	351935		153 00
With Mogul Multiple Socket and Bi-lux refractor	351936		172 00
With Mogul Multiple Socket without Bi-lux refractor	350824		152 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351937		146 00
With Mogul Multiple Socket	352528		145 00

The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

CONTINENTAL 10 STANDARDS*

STYLE NO. 351951

STYLE NO. 351957

STYLE NO. 351942

STYLE NO. 351944

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351938	...	$132 00
With Standard Film Socket without Bi-lux refractor	351939	...	112 00
With Mogul Multiple Socket and Bi-lux refractor	351940	...	131 00
With Mogul Multiple Socket without Bi-lux refractor	351941	...	111 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351942	...	112 00
With Mogul Multiple Socket	350849	...	111 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351943	...	110 00
With Mogul Multiple Socket	341827	...	109 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351944	...	151 00
With Standard Film Socket without Bi-lux refractor	351945	...	131 00
With Mogul Multiple Socket and Bi-lux refractor	351946	...	150 00
With Mogul Multiple Socket without Bi-lux refractor	351947	...	130 00
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351948	...	$131 00
With Mogul Multiple Socket	351950	...	130 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351951	...	189 00
With Standard Film Socket without Bi-lux refractor	351952	...	169 00
With Mogul Multiple Socket and Bi-lux refractor	351953	...	188 00
With Mogul Multiple Socket without Bi-lux refractor	350859	...	168 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	351954	...	148 00
With Standard Film Socket without Bi-lux refractor	351955	...	128 00
With Mogul Multiple Socket and Bi-lux refractor	351956	...	147 00
With Mogul Multiple Socket without Bi-lux refractor	350865	...	127 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351957	...	121 00
With Mogul Multiple Socket	350872	...	120 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

CONTINENTAL 9 STANDARDS*

STYLE NO. 352922

STYLE NO. 351969

STYLE NO. 351960

STYLE NO. 351962

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Jr. Rectilinear Globe and Canopy			
With Standard Film Socket	351958	375	$85 00
With Mogul Multiple Socket	351959	375	84 00
With Sol-Lux Jr. Monax Globe and Canopy			
With Standard Film Socket	351960	375	85 00
With Mogul Multiple Socket	350891	375	84 00
With Sol-Lux Jr. Monax Globe, Metal Canopy			
With Standard Film Socket	351961	373	83 00
With Mogul Multiple Socket	341830	373	82 00
With Paragon Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351962	400	125 00
With Standard Film Socket without Bi-lux refractor	351963	375	105 00
With Mogul Multiple Socket and Bi-lux refractor	351964	400	124 00
With Mogul Multiple Socket without Bi-lux refractor	351965	375	104 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Jr. Monax Globe and Canopy			
With Standard Film Socket	351966	375	$105 00
With Mogul Multiple Socket	351967	375	104 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352292	450	127 00
With Standard Film Socket without Bi-lux refractor	352293	425	107 00
With Mogul Multiple Socket and Bi-lux refractor	351968	450	126 00
With Mogul Multiple Socket without Bi-lux refractor	350903	425	106 00
With Egyptian Jr. Lighting Unit			
With Standard Film Socket	351969	375	94 00
With Mogul Multiple Socket	350911	375	93 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

CAPITAL 15 STANDARDS*

STYLE NO. 352304

STYLE NO. 351988

STYLE NO. 351974

STYLE NO. 352294

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351970	762	$176 00
With Standard Film Socket without Bi-lux refractor	351971	747	156 00
With Mogul Multiple Socket and Bi-lux refractor	351972	762	175 00
With Mogul Multiple Socket without Bi-lux refractor	351973	747	155 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351974	747	156 00
With Mogul Multiple Socket	351975	747	155 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351976	745	154 00
With Mogul Multiple Socket	351977	745	153 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	351988	762	165 00
With Mogul Multiple Socket	351989	762	166 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352294	777	$195 00
With Standard Film Socket without Bi-lux refractor	352295	762	175 00
With Mogul Multiple Socket and Bi-lux refractor	351978	777	194 00
With Mogul Multiple Socket without Bi-lux refractor	351979	762	174 00
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	351980	762	175 00
With Mogul Multiple Socket	351981	762	174 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352304	802	233 00
With Standard Film Socket without Bi-lux refractor	352305	787	213 00
With Mogul Multiple Socket and Bi-lux refractor	351982	802	232 00
With Mogul Multiple Socket without Bi-lux refractor	351983	787	212 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

CAPITAL 12 STANDARDS*

STYLE NO. 352002

STYLE NO. 352008

STYLE NO. 351994

STYLE NO. 351996

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351990	610	$157 00
With Standard Film Socket without Bi-lux refractor	351991	595	137 00
With Mogul Multiple Socket and Bi-lux refractor	351992	610	156 00
With Mogul Multiple Socket without Bi-lux refractor	351993	595	136 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	351994	595	137 00
With Mogul Multiple Socket	350925	595	136 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	351995	593	135 00
With Mogul Multiple Socket	341842	593	134 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	351996	625	176 00
With Standard Film Socket without Bi-lux refractor	351997	610	156 00
With Mogul Multiple Socket and Bi-lux refractor	351998	625	175 00
With Mogul Multiple Socket without Bi-lux refractor	351999	610	155 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	352000	610	$156 00
With Mogul Multiple Socket	352001	610	155 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352002	640	214 00
With Standard Film Socket without Bi-lux refractor	352003	625	194 00
With Mogul Multiple Socket and Bi-lux refractor	352004	640	213 00
With Mogul Multiple Socket without Bi-lux refractor	350935	625	193 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352005	625	173 00
With Standard Film Socket without Bi-lux refractor	352006	610	153 00
With Mogul Multiple Socket and Bi-lux refractor	352007	625	172 00
With Mogul Multiple Socket without Bi-lux refractor	350941	610	152 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	352008	600	146 00
With Mogul Multiple Socket	350948	600	145 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

CAPITAL 10 STANDARDS*

STYLE No. 352021

STYLE No. 352024

STYLE No. 352013

STYLE No. 352296

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352009	543	$147 00
With Standard Film Socket without Bi-lux refractor	352010	528	127 00
With Mogul Multiple Socket and Bi-lux refractor	352011	543	146 00
With Mogul Multiple Socket without Bi-lux refractor	352012	528	126 00
With Sol-Lux Jr. Monax Globe and Canopy			
With Standard Film Socket	352013	528	127 00
With Mogul Multiple Socket	352546	528	126 00
With Sol-Lux Jr. Monax Globe, Metal Canopy			
With Standard Film Socket	352014	526	125 00
With Mogul Multiple Socket	352547	526	124 00
With Paragon Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352296	518	166 00
With Standard Film Socket without Bi-lux refractor	352015	503	146 00
With Mogul Multiple Socket and Bi-lux refractor	352016	518	165 00
With Mogul Multiple Socket without Bi-lux refractor	352017	503	145 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Jr. Monax Globe and Canopy			
With Standard Film Socket	352018	503	$146 00
With Mogul Multiple Socket	352019	503	145 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352302	533	204 00
With Standard Film Socket without Bi-lux refractor	352303	518	184 00
With Mogul Multiple Socket and Bi-lux refractor	352020	533	203 00
With Mogul Multiple Socket without Bi-lux refractor	350976	518	183 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352021	518	163 00
With Standard Film Socket without Bi-lux refractor	352022	503	143 00
With Mogul Multiple Socket and Bi-lux refractor	352023	518	162 00
With Mogul Multiple Socket without Bi-lux refractor	350982	503	142 00
With Egyptian Jr. Lighting Unit			
With Standard Film Socket	352024	493	136 00
With Mogul Multiple Socket	352548	493	135 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

BROADWAY 12 STANDARDS*

STYLE NO. 352036

STYLE NO. 352042

STYLE NO. 352030

STYLE NO. 352034

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352025	664	$157 00
With Standard Film Socket without Bi-lux refractor	352026	649	137 00
With Mogul Multiple Socket and Bi-lux refractor	352027	664	156 00
With Mogul Multiple Socket without Bi-lux refractor	352028	649	136 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	352029	649	137 00
With Mogul Multiple Socket	351007	649	136 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	352030	647	135 00
With Mogul Multiple Socket	351854	647	134 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352297	679	176 00
With Standard Film Socket without Bi-lux refractor	352031	664	156 00
With Mogul Multiple Socket and Bi-lux refractor	352032	679	175 00
With Mogul Multiple Socket without Bi-lux refractor	352033	664	155 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	352034	664	$156 00
With Mogul Multiple Socket	352035	664	155 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352036	694	214 00
With Standard Film Socket without Bi-lux refractor	352037	679	194 00
With Mogul Multiple Socket and Bi-lux refractor	352038	694	213 00
With Mogul Multiple Socket without Bi-lux refractor	351017	679	193 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352039	679	173 00
With Standard Film Socket without Bi-lux refractor	352040	664	153 00
With Mogul Multiple Socket and Bi-lux refractor	352041	679	172 00
With Mogul Multiple Socket without Bi-lux refractor	351023	664	152 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	352042	654	146 00
With Mogul Multiple Socket	351030	654	145 00

*The numeral following the name of standard indicates the approximate height in feet of column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

BROADWAY 10 STANDARDS*

STYLE NO. 352054

STYLE NO. 352060

STYLE NO. 352047

STYLE NO. 352048

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352043	520	$152 00
With Standard Film Socket without Bi-lux refractor	352044	505	132 00
With Mogul Multiple Socket and Bi-lux refractor	352298	520	151 00
With Mogul Multiple Socket without Bi-lux refractor	352045	505	131 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	352046	505	132 00
With Mogul Multiple Socket	351049	505	131 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	352047	503	130 00
With Mogul Multiple Socket	341860	503	129 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352048	535	171 00
With Standard Film Socket without Bi-lux refractor	352049	520	151 00
With Mogul Multiple Socket and Bi-lux refractor	352050	535	170 00
With Mogul Multiple Socket without Bi-lux refractor	352051	520	150 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	352052	520	$151 00
With Mogul Multiple Socket	352053	520	150 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352054	550	209 00
With Standard Film Socket without Bi-lux refractor	352055	535	189 00
With Mogul Multiple Socket and Bi-lux refractor	352056	550	208 00
With Mogul Multiple Socket without Bi-lux refractor	351059	535	188 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352057	535	168 00
With Standard Film Socket without Bi-lux refractor	352058	520	148 00
With Mogul Multiple Socket and Bi-lux refractor	352059	535	167 00
With Mogul Multiple Socket without Bi-lux refractor	351066	520	147 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	352060	510	141 00
With Mogul Multiple Socket	351073	510	140 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

GRAND VIEW 12 STANDARDS*

STYLE NO. 352072

STYLE NO. 352078

STYLE NO. 352065

STYLE NO. 352299

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352061	597	$171 00
With Standard Film Socket without Bi-lux refractor	352062	582	151 00
With Mogul Multiple Socket and Bi-lux refractor	352063	597	170 00
With Mogul Multiple Socket without Bi-lux refractor	352064	582	150 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	352065	582	151 00
With Mogul Multiple Socket	351094	582	150 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	352066	580	149 00
With Mogul Multiple Socket	351089	580	148 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352299	612	190 00
With Standard Film Socket without Bi-lux refractor	352067	597	170 00
With Mogul Multiple Socket and Bi-lux refractor	352068	612	189 00
With Mogul Multiple Socket without Bi-lux refractor	352069	597	169 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	352070	597	$170 00
With Mogul Multiple Socket	352071	597	169 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352072	627	228 00
With Standard Film Socket without Bi-lux refractor	352073	612	208 00
With Mogul Multiple Socket and Bi-lux refractor	352074	627	227 00
With Mogul Multiple Socket without Bi-lux refractor	351104	612	207 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352075	612	191 00
With Standard Film Socket without Bi-lux refractor	352076	597	171 00
With Mogul Multiple Socket and Bi-lux refractor	352077	612	190 00
With Mogul Multiple Socket without Bi-lux refractor	351110	597	170 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	352078	587	160 00
With Mogul Multiple Socket	351117	587	159 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

VISTA 12 STANDARDS*

STYLE NO. 352094

STYLE NO. 352097

STYLE NO. 352084

STYLE NO. 352085

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352079	395	$132 00
With Standard Film Socket without Bi-lux refractor	352080	380	112 00
With Mogul Multiple Socket and Bi-lux refractor	352081	395	131 00
With Mogul Multiple Socket without Bi-lux refractor	352082	380	111 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	352083	380	112 00
With Mogul Multiple Socket	351137	380	111 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	352084	378	110 00
With Mogul Multiple Socket	351132	378	109 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352085	410	151 00
With Standard Film Socket without Bi-lux refractor	352086	395	131 00
With Mogul Multiple Socket and Bi-lux refractor	352087	410	150 00
With Mogul Multiple Socket without Bi-lux refractor	352088	395	130 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	352089	395	$131 00
With Mogul Multiple Socket	352090	395	130 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352091	425	189 00
With Standard Film Socket without Bi-lux refractor	352092	410	169 00
With Mogul Multiple Socket and Bi-lux refractor	352093	425	188 00
With Mogul Multiple Socket without Bi-lux refractor	351147	410	168 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352094	410	148 00
With Standard Film Socket without Bi-lux refractor	352095	395	128 00
With Mogul Multiple Socket and Bi-lux refractor	352096	410	147 00
With Mogul Multiple Socket without Bi-lux refractor	351154	395	127 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	352097	385	121 00
With Mogul Multiple Socket	352538	385	120 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

VILLA 11 STANDARDS*

STYLE NO. 352109

STYLE NO. 352115

STYLE NO. 352102

STYLE NO. 352300

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352098	460	$118 00
With Standard Film Socket without Bi-lux refractor	352099	445	98 00
With Mogul Multiple Socket and Bi-lux refractor	352100	460	117 00
With Mogul Multiple Socket without Bi-lux refractor	352101	445	97 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	352102	445	98 00
With Mogul Multiple Socket	351181	445	97 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	352103	443	96 00
With Mogul Multiple Socket	351176	443	95 00
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352300	475	137 00
With Standard Film Socket without Bi-lux refractor	352104	460	117 00
With Mogul Multiple Socket and Bilux refractor	352105	475	136 00
With Mogul Multiple Socket without Bi-lux refractor	352106	460	116 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	352107	460	$117 00
With Mogul Multiple Socket	352108	460	116 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352109	490	175 00
With Standard Film Socket without Bi-lux refractor	352110	475	155 00
With Mogul Multiple Socket and Bi-lux refractor	352111	490	174 00
With Mogul Multiple Socket without Bi-lux refractor	351191	475	154 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352112	475	134 00
With Standard Film Socket without Bi-lux refractor	352113	460	114 00
With Mogul Multiple Socket and Bi-lux refractor	352114	475	133 00
With Mogul Multiple Socket without Bi-lux refractor	351197	460	113 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	352115	450	107 00
With Mogul Multiple Socket	352537	450	106 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

VILLA 9 STANDARDS*

STYLE NO. 352140

STYLE NO. 352144

STYLE NO. 352132

STYLE NO. 352134

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Jr. Rectilinear Globe and Canopy			
With Standard Film Socket	352130	285	$90 00
With Mogul Multiple Socket	352131	285	89 00
With Sol-Lux Jr. Monax Globe and Canopy			
With Standard Film Socket	352132	285	90 00
With Mogul Multiple Socket	351257	285	89 00
With Sol-Lux Jr. Monax Globe, Metal Canopy			
With Standard Film Socket	352133	283	88 00
With Mogul Multiple Socket	351254	283	87 00
With Egyptian Jr. Lighting Unit			
With Standard Film Socket	352144	290	99 00
With Mogul Multiple Socket	351263	290	98 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352134	310	$130 00
With Standard Film Socket without Bi-lux refractor	352135	295	110 00
With Mogul Multiple Socket and Bi-lux refractor	352136	310	129 00
With Mogul Multiple Socket without Bi-lux refractor	352137	295	109 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352140	320	132 00
With Standard Film Socket without Bi-lux refractor	352141	305	112 00
With Mogul Multiple Socket and Bi-lux refractor	352142	320	131 00
With Mogul Multiple Socket without Bi-lux refractor	352143	305	111 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

PARK VIEW 9 STANDARDS*

STYLE NO. 352126

STYLE NO. 352129

STYLE NO. 352118

STYLE NO. 352120

Description	Style No.	Ship. Wt., Lb.	List Price
With Sol-Lux Jr. Rectilinear Globe and Canopy			
With Standard Film Socket	352116	302	$85 00
With Mogul Multiple Socket	352117	302	84 00
With Sol-Lux Jr. Monax Globe and Canopy			
With Standard Film Socket	352118	302	85 00
With Mogul Multiple Socket	351224	302	84 00
With Sol-Lux Jr. Monax Globe, Metal Canopy			
With Standard Film Socket	352119	300	83 00
With Mogul Multiple Socket	341708	300	82 00
With Paragon Jr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352120	332	125 00
With Standard Film Socket without Bi-lux refractor	352121	317	105 00
With Mogul Multiple Socket and Bi-lux refractor	352122	332	124 00
With Mogul Multiple Socket without Bi-lux refractor	352123	317	104 00

Description	Style No.	Ship. Wt., Lb.	List Price
With Paragon Jr. Monax Globe and Canopy			
With Standard Film Socket	352124	317	$105 00
With Mogul Multiple Socket	352125	317	104 00
With Octagonal Jr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352126	337	127 00
With Standard Film Socket without Bi-lux refractor	352127	322	107 00
With Mogul Multiple Socket and Bi-lux refractor	352128	337	126 00
With Mogul Multiple Socket without Bi-lux refractor	351236	322	106 00
With Egyptian Jr. Lighting Unit			
With Standard Film Socket	352129	307	94 00
With Mogul Multiple Socket	352536	307	93 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

SINGLE-LIGHT CAST-IRON STANDARDS—Continued

CALIFORNIA 13 STANDARDS*

STYLE NO. 352518

STYLE NO. 352506

STYLE NO. 352512

Description	Style No.	Ship. Wt. Lb., Ea.	List Price
With Sol-Lux Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352502	912	$215 00
With Standard Film Socket without Bi-lux refractor	352503	897	195 00
With Mogul Multiple Socket and Bi-lux refractor	352504	912	214 00
With Mogul Multiple Socket without Bi-lux refractor	352505	897	194 00
With Sol-Lux Sr. Monax Globe and Canopy			
With Standard Film Socket	352506	897	195 00
With Mogul Multiple Socket	352507	897	194 00
With Sol-Lux Sr. Monax Globe, Metal Canopy			
With Standard Film Socket	352508	895	193 00
With Mogul Multiple Socket	352509	895	192 00
With Egyptian Sr. Lighting Unit			
With Standard Film Socket	352510	900	204 00
With Mogul Multiple Socket	352511	900	203 00

Description	Style No.	Ship. Wt. Lb., Ea.	List Price
With Paragon Sr. Rectilinear Globe and Canopy			
With Standard Film Socket and Bi-lux refractor	352512	925	$234 00
With Standard Film Socket without Bi-lux refractor	352513	910	214 00
With Mogul Multiple Socket and Bi-lux refractor	352514	925	233 00
With Mogul Multiple Socket without Bi-lux refractor	352515	910	213 00
With Paragon Sr. Monax Globe and Canopy			
With Standard Film Socket	352516	910	214 00
With Mogul Multiple Socket	352517	910	213 00
With Octagonal Sr. Lighting Unit			
With Standard Film Socket and Bi-lux refractor	352518	940	272 00
With Standard Film Socket without Bi-lux refractor	352519	925	252 00
With Mogul Multiple Socket and Bi-lux refractor	352520	940	271 00
With Mogul Multiple Socket without Bi-lux refractor	352521	925	251 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

TWO-LIGHT CAST-IRON STANDARDS

CALIFORNIA 17 2-LIGHT STANDARD WITH PARAGON SR. LIGHTING UNITS

SANTIAGO 17 2-LIGHT STANDARD WITH OCTAGONAL JR. PENDANTS

ARCADIAN 16 2-LIGHT STANDARD WITH SOL-LUX SR. LIGHTING UNITS

Two-light standards have been designed to meet the growing demand for Super Whiteway lighting units of high intensity. They are generally installed on exceptionally wide and important business streets and civic centers. They meet the demand for units which will provide ample illumination and a dignified appearance on the finest of metropolitan thoroughfares.

The types of two-light standards illustrated are similar in design to the single-light units listed on previous pages. This allows both single and two-light standards to be used in close proximity without interrupting the harmony of design and appearance. It also has economic advantages since all parts of the equipment are standard and interchangeable.

On the Santiago standard the light units are pendent. This design has many attractive features and produces a very efficient distribution. When desired one arm may be omitted.

Any type of lighting unit may be used on these standards, with or without refractors, as desired. Lighting units and casings are not included in the list prices. For prices and descriptions of lighting units see pages 891 to 896.

TWO-LIGHT CAST-IRON STANDARDS—Continued

CALIFORNIA 17 2-LIGHT STANDARD WITH OCTAGONAL JR. LIGHTING UNITS

EDGEWATER 17 2-LIGHT STANDARD WITH PARAGON SR. LIGHTING UNITS

CALIFORNIA 17 2-LIGHT STANDARD WITH OCTAGONAL JR. LIGHTING UNITS

LIST PRICES

Description	Style No.	Ship. Wt. Lb. Ea.	List Price
Santiago 17 2-light standard*	352390	876	$250 00
Arcadian 16 2-light standard*	352391	642	175 00
Edgewater 17 2-light standard*	352392	875	200 00
California 17 2-light standard*	352393	1066	300 00

*The numeral following the name of standard indicates the approximate height in feet of the point at which lighting unit is attached.

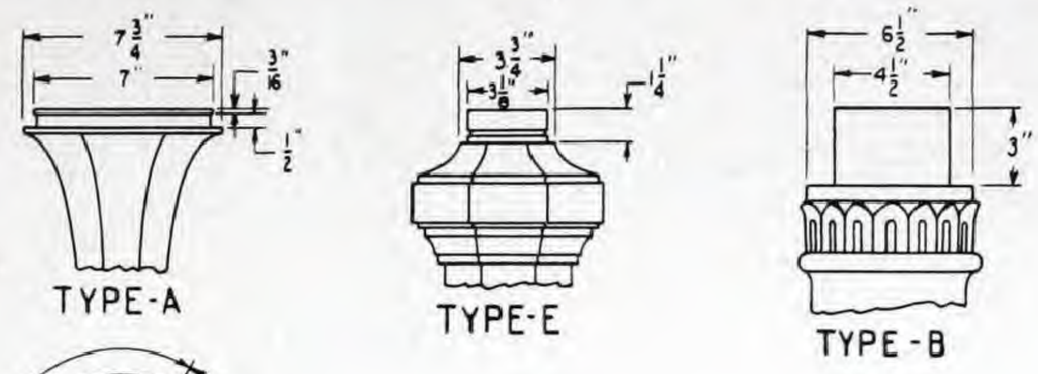
Order by Style Number

COLUMNS

A complete ornamental cast-iron street-lighting unit consists of a base and a column, preferably cast in one piece, surmounted by the casing or globe-holder and the lighting unit or post top. Auxiliary equipment for the lamps and wiring are necessary detail parts to make the unit complete.

The standards should have a base large enough to give stability without occupying excess space on the sidewalk. The column should have gracefully tapering lines so that when cast integral with the base it forms a standard with correct proportions throughout.

Each column is arranged to support a casing at the top. Different standards have different methods of fitting the casing. The various fitters are designated by a letter. This letter appears in the table below to indicate the type of fitter used at the top of each style of column.



COLUMN TOP FITTERS

LIST PRICES

Street Lighting Columns

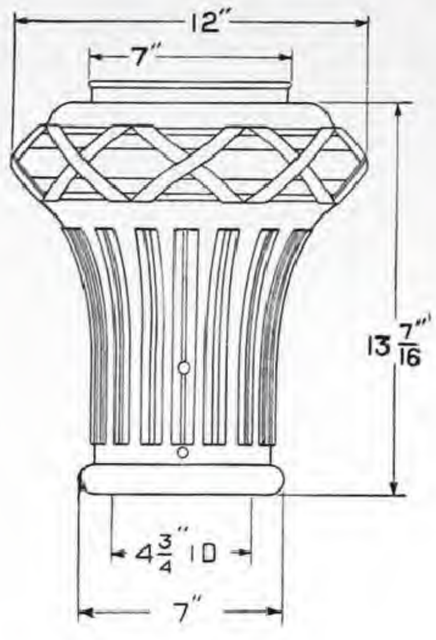
Name of Column	Shape of Base	Base Dia. Inches	Base Ht. Inches	Type of Top Fitter	Style No.	Ship. Wt. Lb. Ea.	List Price
Arcadian 15	Octagonal	20	..	A	345902	560	$110 00
Arcadian 12	Octagonal	20	..	A	339838	412	78 00
Arcadian 10	Octagonal	16	..	A	353978	250	61 00
Edgewater 15	Octagonal	20	..	E	345905	655	110 00
Edgewater 12	Octagonal	20	..	E	350379	435	78 00
Edgewater 10	Octagonal	18	..	E	336529	314	68 00
Continental 11	Round	20	31	B	336009	537	106 00
Continental 10	Round	18	28	B	336311	425	81 00
Continental 9	Round	16	21	C	336016	248	60 00
Commercial 11	Octagonal	21	31	F	339002	450	107 00
Commercial 10	Octagonal	18	25	F	352989	316	71 00
Capitol 15	Round	20	32	B	345903A	705	125 00
Capitol 12	Round	20	31	B	336022A	540	106 00
Capitol 10	Round	18	31	B	336102	433	96 00
Broadway 12	Round	20	32	B	352810	595	106 00
Broadway 11	Round	20	32	B	335752	450	101 00
Park View 9	Round	16	17	C	335747	252	60 00
Villa 11	Round	19	21	A	353739	310	67 00
Villa 9	Round	17	18	A	336029	235	65 00
Grand View 13	Octagonal	22	26	B	353737	529	121 00
Vista 12	Round	17	34	F	353738	350	81 00
Boulevard 12	Round	14	34	C	335553	240	59 00
Riverside 12	Round	18	47	C	335542	380	67 00
Commonwealth 12	Square	18	24	C	335794	410	81 00
Edgewater 17 Two-light	Octagonal	20	20	..	345941	675	110 00
Arcadian 16 Two-light	Octagonal	20	..	..	345902	565	110 00
Arcadian 13 Two-light	Octagonal	20	..	A	339838	412	78 00
Capitol 17 Two-light	Round	20	32	B	345903A	705	125 00
Capitol 15 Two-light	Round	20	31	B	336022A	540	106 00
California 17 Two-light	Square	20	34	..	354055	822	121 00

Newel Columns

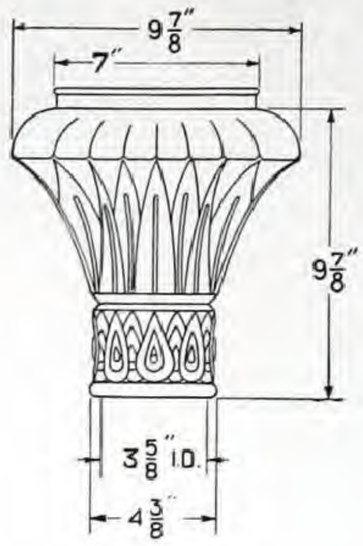
Arcadian 8	Octagonal	16	..	A	339886	200	61 00
Arcadian 6	Octagonal	12	..	A	337984	180	51 00
Arcadian 4	Octagonal	12	..	A	354061	150	41 00
Metropolitan 6	Square	14	24	C	336099	200	65 00
Edgewater 6	Octagonal	18	18	E	354143	200	67 00
Sol-Lux 5	Round	14	24	C	335924	150	48 00
Sol-Lux 3	Round	14	24	C	335923	125	36 00
Commerce 5	Rectangular	21x35	..	B	335583	300	75 00

Order by Style Number

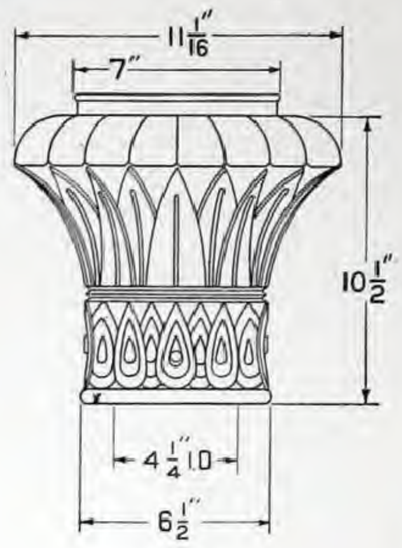
CASINGS FOR CAST-IRON STANDARDS



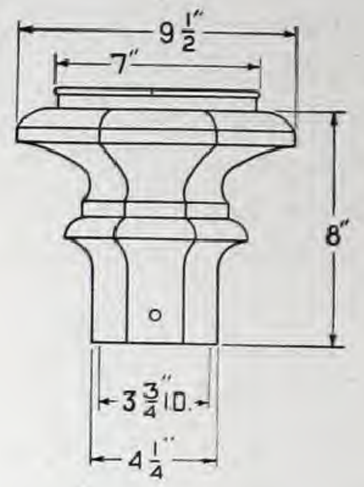
GRAND VIEW



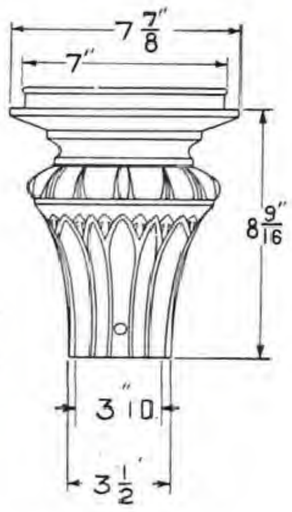
EGYPTIAN JR.



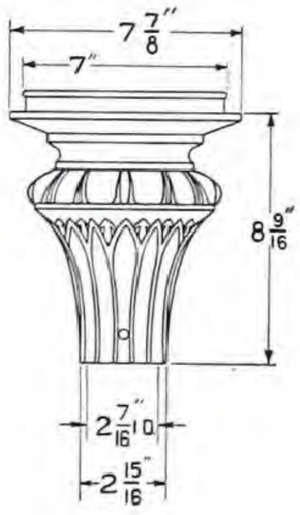
EGYPTIAN SR.



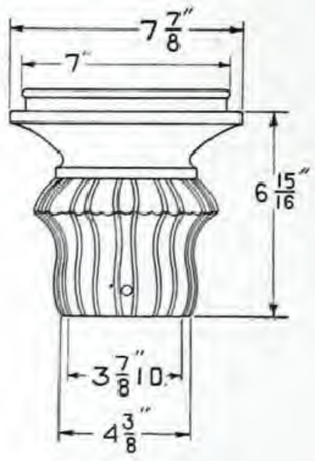
COMMONWEALTH



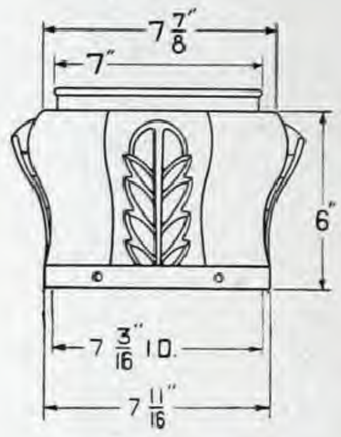
VILLA SR.



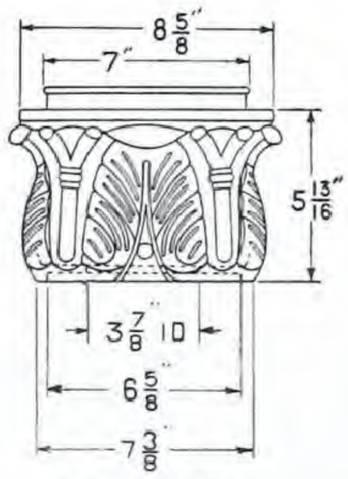
VILLA JR.



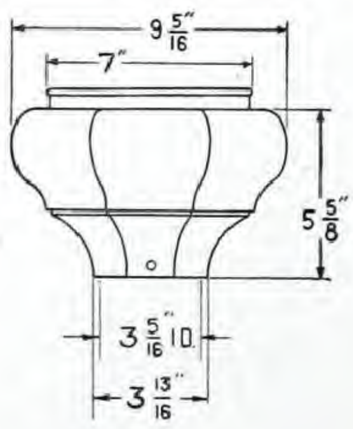
PARK VIEW



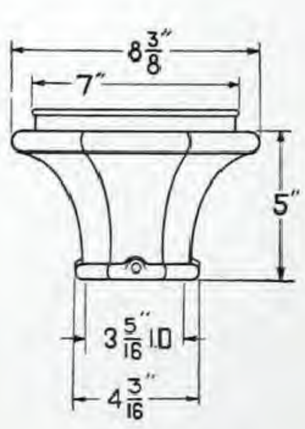
CALIFORNIA



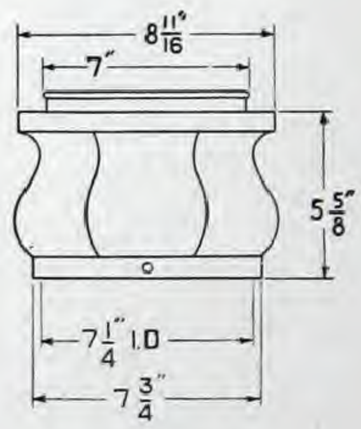
COMMERCIAL



EDGEWATER
TO TAKE COIL



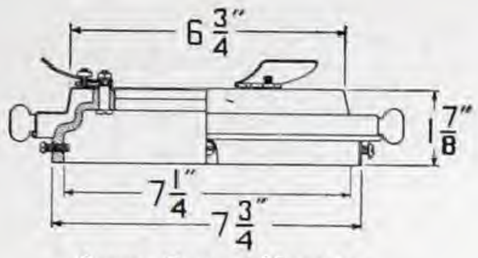
EDGEWATER



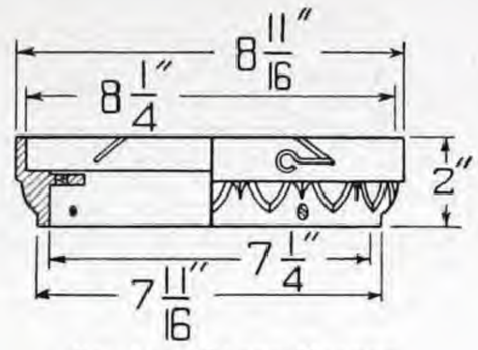
ARCADIAN

Dimensions are for reference only. For official dimensions apply to the nearest district office.

CASINGS FOR CAST-IRON STANDARDS—Continued



JIFFY GLOBE-HOLDER



SOL-LUX GLOBE-HOLDER

Casings of various designs have been developed to harmonize with the ornamental standard and the lighting unit. Some casings have sufficient clearance on the inside to accommodate auto-transformers or reactance coils. The larger types as a rule will accommodate various transformer combinations.

Due to the variety of both column and casing designs, care should be used in the selection of casings to insure proper combinations. Unsuitable combinations will not fit mechanically. The bottom of the casing is arranged to fit certain definite types of top fitters on the column. In the list of casings below, the letters in the second column indicate the type of column top fitter on which each casing may be used.

The casing has a flange at the top which has the same diameter as the Type A top fitter on columns. All lighting units are arranged to fit over this flange. It will be noted that lighting units can be mounted on Type A columns without the use of a casing.

LIST PRICES

CASINGS

Name of Casing	Type of Column Top Fitter	Additive Heights of Casing, Inches	Style No.	Ship. Wt., Lb.	List Price
Grand View (without globe ring)	B	17⅞	353736	81	$6 00
Egyptian Junior (without globe ring)	C	9¾	336293	40	6 00
Egyptian Senior (without globe ring)	B	10¾	336294	47	6 00
Commonwealth	C	8	351522	33	6 00
Villa Senior	D	8½	353757	33	6 00
Villa Junior	D	8½	353782	33	6 00
Park View (without globe ring)	C	6¼	351381	33	6 00
California	A	6	351491	34	6 00
Commercial (without globe ring)	F	5½	353423	39	6 00
Edgewater (large, without globe ring)	E	5⅝	351382	35	6 00
Edgewater (small, without globe ring)	E	5	353387	35	4 00
Arcadian (without globe ring)	A	5¾	350662	34	6 00

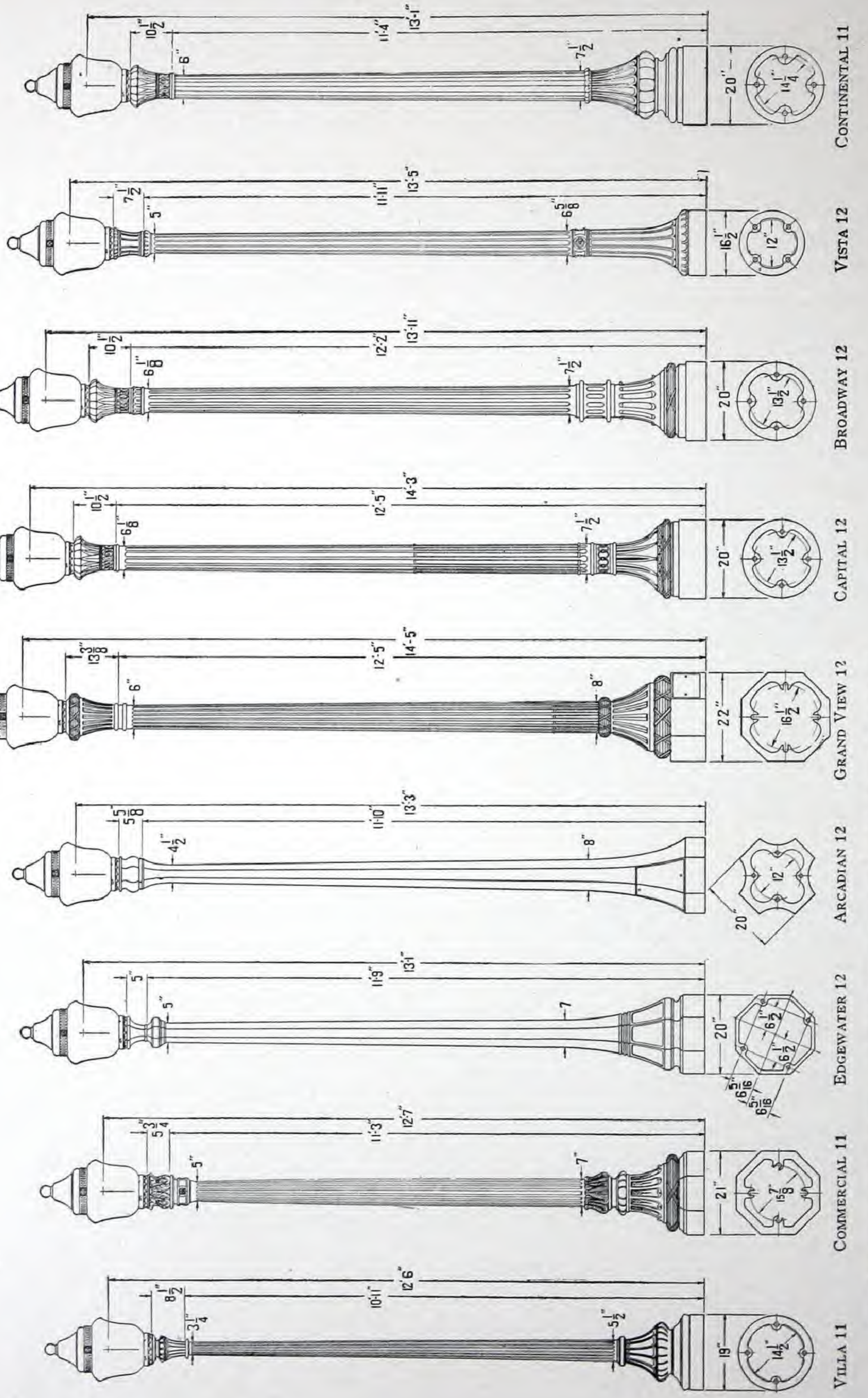
GLOBE-HOLDERS

Sol-Lux Globe-holder only	A	1	354140	3	2 00
Sol-Lux Globe-holder with adjustable socket support	A	1	354067	3	4 00
Jiffy Globe-holder for globes with 8-inch bottom fitters	A	1	346124	4	10 00
Jiffy Globe-holder for globes with 9⅜-inch bottom fitters	A	1	346125	4	10 00

NOTE: For column data see page 863.

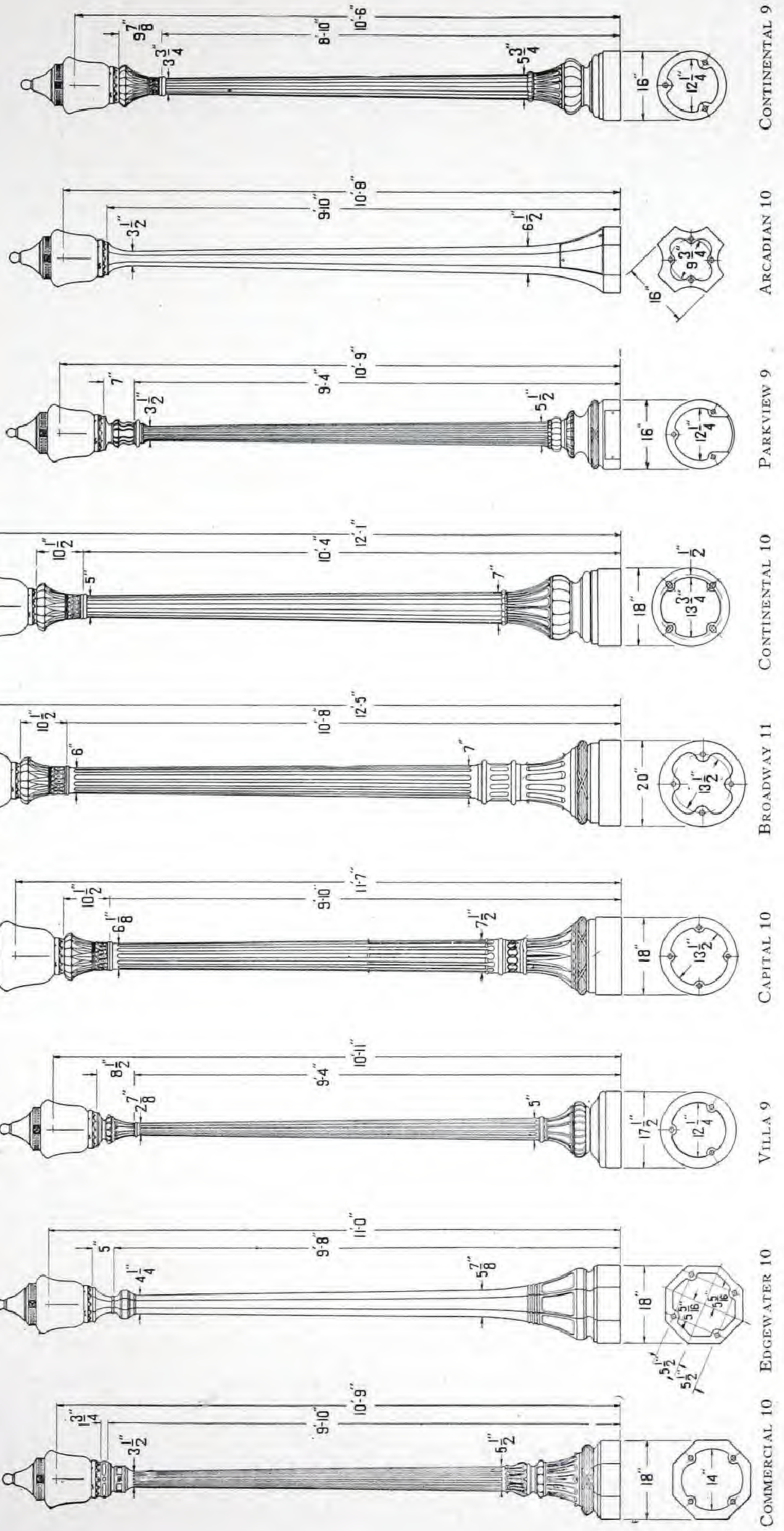
Order by Style Number

DIMENSIONS OF STANDARDS



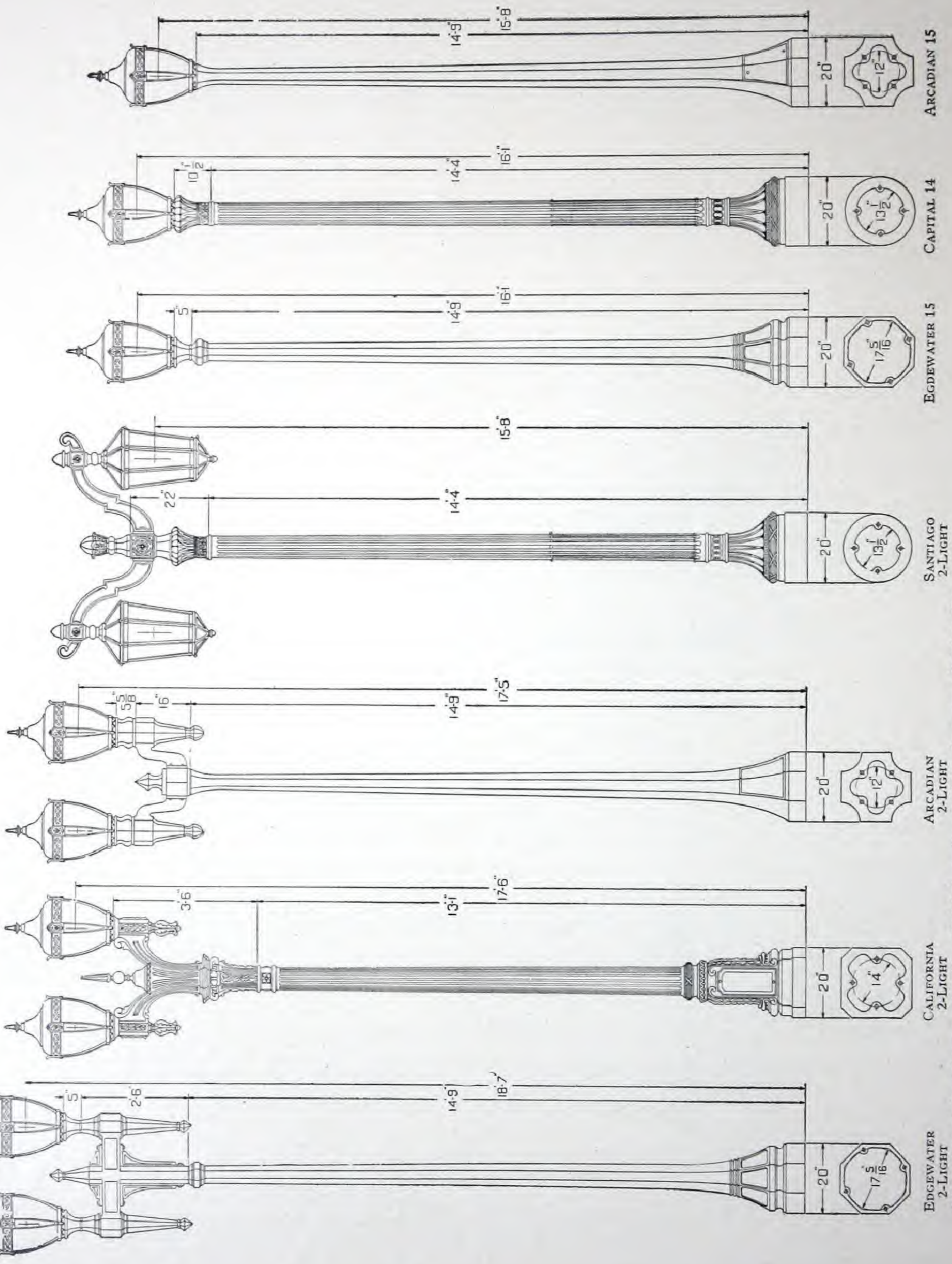
Dimensions are for reference only. For official dimensions apply to the nearest district office.

DIMENSIONS OF STANDARDS—Continued



Dimensions are for reference only. For official dimensions apply to the nearest district office.

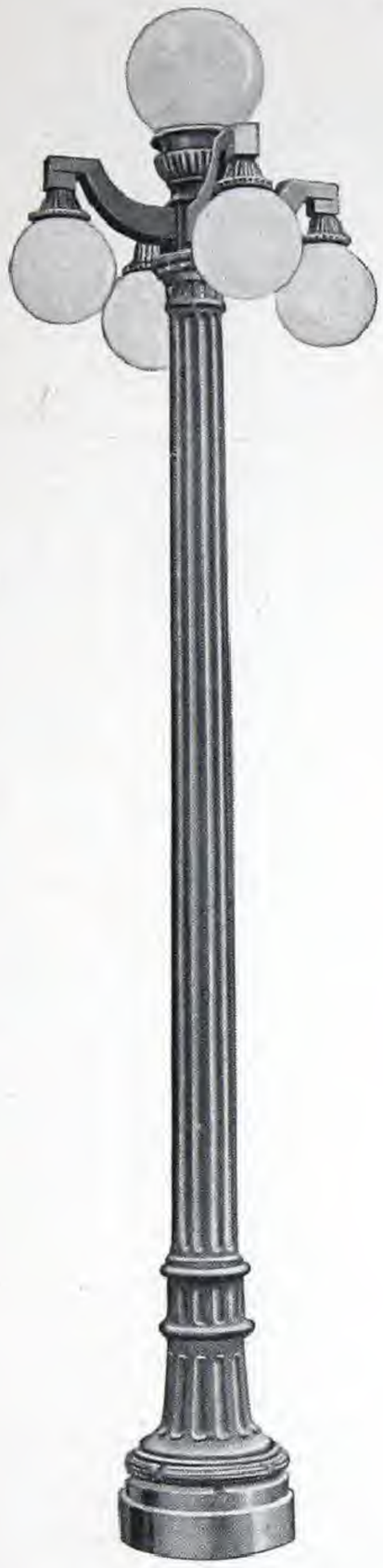
DIMENSIONS OF STANDARDS—Continued



Dimensions are for reference only. For official dimensions apply to the nearest district office.

CAST-IRON CLUSTER STANDARDS

BROADWAY AND RIVERSIDE



BROADWAY

RIVERSIDE

While cluster-light standards are sometimes considered more decorative than single-light standards, their maintenance costs are much higher; their use is no longer considered economical for the lighting of streets. During recent years many cities where such equipment is used have converted them to single-light standards. All types of Westinghouse cluster-light standards are easily convertible to single-light standards at little cost. The saving in maintenance and operating charges thus effected will pay for the cost of conversion in six months.

Broadway Standard

Base, 20 inches in diameter, 2 feet 8 inches high. Column, 7½ inches in diameter above the base, tapering to 6⅛ inches in diameter near the top. Height from ground to bottom of pendent globes, 11 feet 7½ inches; to top of center globe, 15 feet; to top of globe on 1-light post, 14 feet. Distance from center to center of opposite globes, 32 inches. Pendent globes, 6x12 inches; top globe, 8x16 inches. Globe for 1-light post 8x16 inches. Use four ¾-inch x 15-inch foundation bolts.

List prices are given on next page.

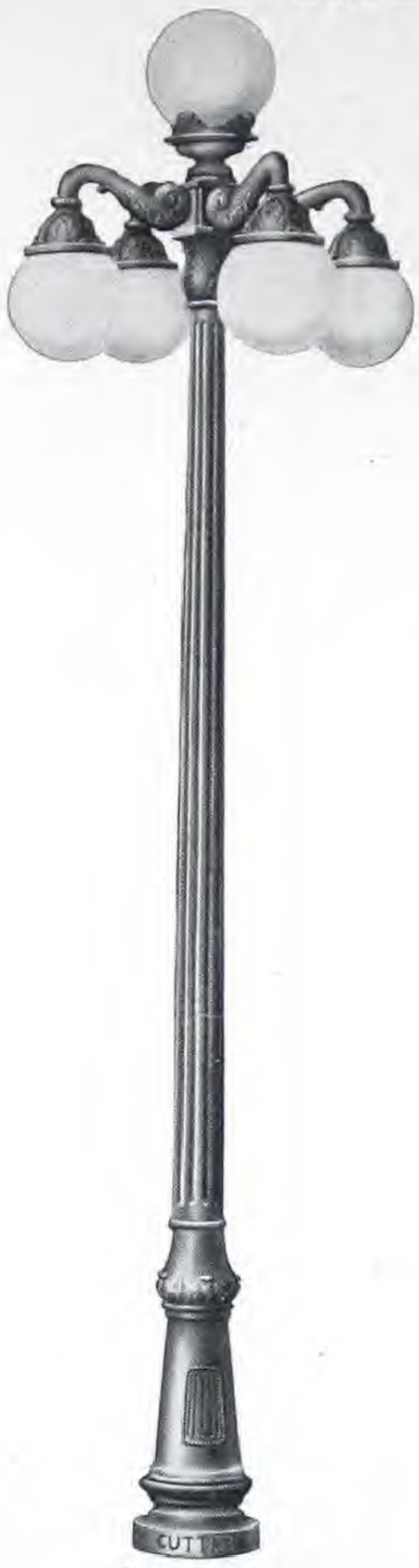
Riverside Standard

Base, 18 inches in diameter, 3 feet 6 inches high. Column, 8½ inches largest diameter, tapering to 3½ inches in diameter near the top. Height from ground to bottom of pendent globes, 11 feet; to top of top globe, 14 feet; to top of globe on the 1-light post, 13 feet 2 inches. Distance from center to center of opposite globes, 40 inches. All globes 8x12 inches, except for 1-light post, which is 8x16 inches. Use four ¾-inch x 15-inch foundation bolts.

List prices are given on next page.

CAST-IRON CLUSTER STANDARDS—Continued

BOULEVARD AND COMMONWEALTH



BOULEVARD

Boulevard Standard

Base, 14 inches diameter, 2 feet 10 inches high. Column, 5½ inches diameter above the base, tapering to 3½ inches diameter near the top. Height, from ground to bottom of pendent globes, 10 feet; to top of top globe, 13 feet 2 inches; to top of globe on the 1-light standard, 12 feet 7 inches. Distance from center to center of opposite globes, 32 inches. Pendent globes, 6x10 inches; top globe, 6x12 inches; globe for 1-light standard 8x14 inches. Use four ¾-inch x 15-inch foundation bolts.

COMMONWEALTH

Commonwealth Standard

Base, 18 inches square, 2 feet high. Column, 8 inches octagon above the base, tapering to 4 inches octagon near the top. Height from ground to bottom of pendent globes, 11 feet; to top of top globe, 14 feet 3 inches; to top of globe on the 1-light post, 13 feet 6 inches. Distance from center to center of opposite globes, 36 inches. Pendent globes, 6x12 inches; top globe, 8x14 inches; globe for 1-light post, 8x16 inches. Use four ¾-inch x 15-inch foundation bolts.

LIST PRICES

No. of Lights	Style No.	Ship. Wt., Lb. Ea.	List Price
	Broadway		
1	343160	560	$ 96 00
2	343161	650	118 00
3	343162	650	118 00
4	343163	700	140 00
5	343164	700	140 00
	Boulevard		
1	340880	300	65 00
2	340881	335	87 00
3	340882	335	87 00
4	340883	375	100 00
5	340884	375	100 00
	Riverside		
1	340872	450	$ 73 00
2	340873	500	103 00
3	340874	500	103 00
4	340875	585	122 00
5	340876	585	122 00
	Commonwealth		
1	342968	475	87 00
2	342969	560	118 00
3	342970	560	118 00
4	342971	665	140 00
5	342972	665	140 00

Prices of standards include medium multiple sockets but not globes, wiring or foundation bolts.

Order by Style Number

ORNAMENTAL CAST-IRON NEWELS

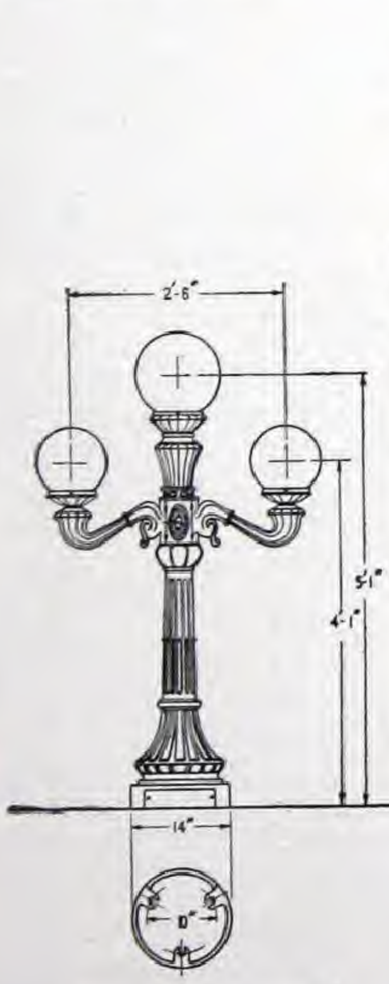
SOL-LUX 1-LIGHT
GATE POST NEWEL

SOL-LUX 5-LIGHT
GATE POST NEWEL

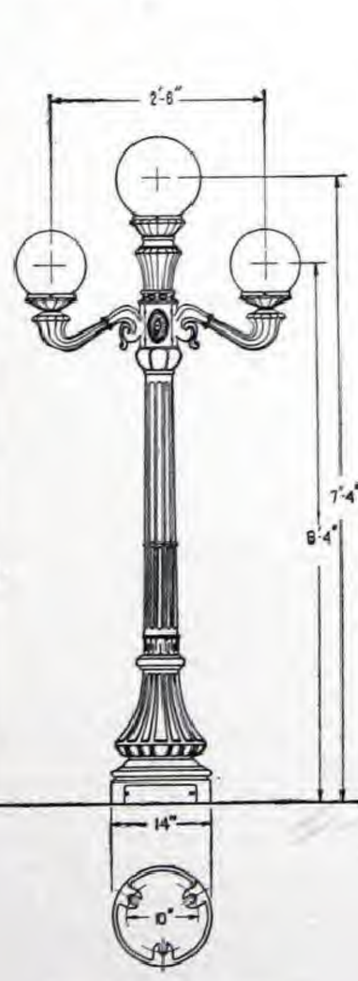
SOL-LUX 5-LIGHT
BRIDGE NEWEL

SOL-LUX 3-LIGHT
BRIDGE NEWEL

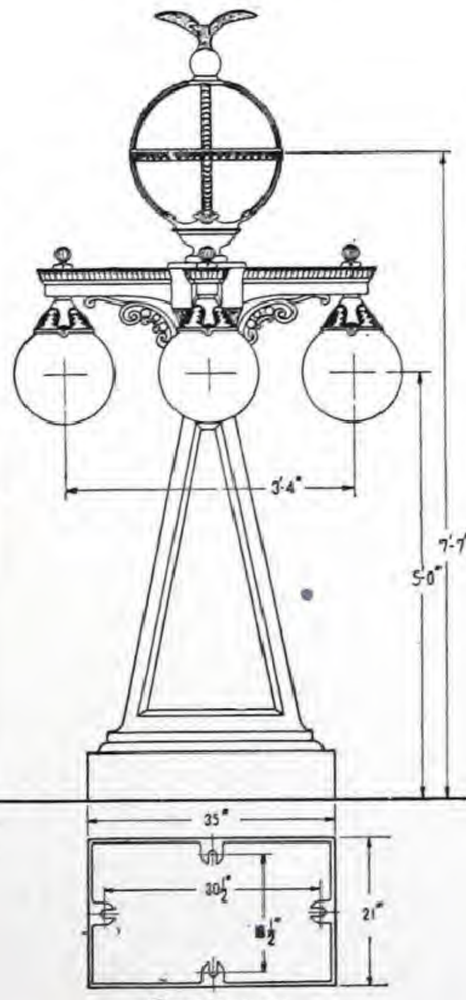
SOL-LUX 1-LIGHT
BRIDGE NEWEL



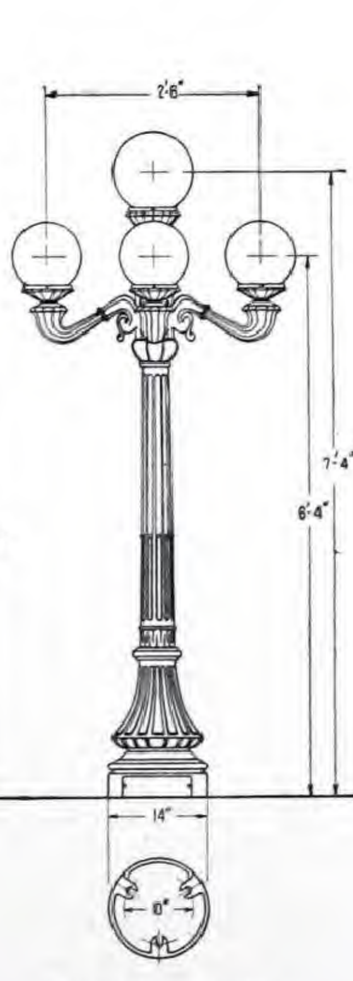
SOL-LUX 3-LIGHT
GATE POST NEWEL



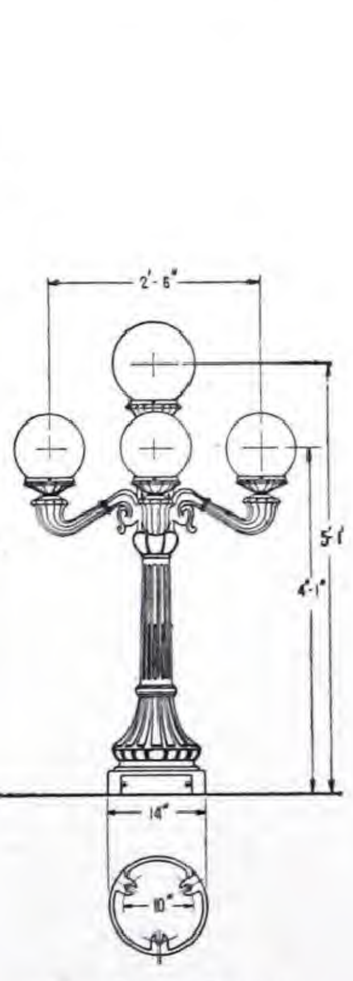
SOL-LUX 3-LIGHT
BRIDGE NEWEL



COMMERCE
NEWEL



SOL-LUX 5-LIGHT
BRIDGE NEWEL



SOL-LUX 5-LIGHT
GATE POST NEWEL

Dimensions are for reference only. For official dimensions apply to the nearest district office.

CAST-IRON NEWELS AND TRAFFIC STANDARDS

ARCADIAN NEWEL

METROPOLITAN NEWEL

COMMERCE NEWEL

"SAFETY FIRST" TRAFFIC NEWEL

EDGEWATER TRAFFIC NEWEL

Arcadian Newels

Designed to be used as an ornamental newel or traffic post.

Price includes eight-inch globe holder ring and socket but not glassware, wiring or foundation bolts.

Description	Style No.	Ship. Wt. Lb. Ea.	List Price
Arcadian 8, with medium multiple socket	352481	210	$63 90
Arcadian 8, with mogul multiple socket	352482	210	64 00
Arcadian 8, with Standard film socket	352483	210	65 00
Arcadian 6, with medium multiple socket	340860	190	53 90
Arcadian 6, with mogul multiple socket	340861	190	54 00
Arcadian 6, with Standard film socket	352484	190	55 00
Arcadian 4, with medium multiple socket	352485	160	43 90
Arcadian 4, with mogul multiple socket	352486	160	44 00
Arcadian 4, with Standard film socket	352487	160	45 00

Metropolitan Newels

A newel of simple but artistic design, adapted for lighting the entrances of buildings or for bridges and public places. Globe-holder has 8-inch fitter.

Price includes eight-inch globe holder ring and socket but not lighting unit, wiring or foundation bolts.

Metropolitan 6, with medium multiple socket	352488	225	67 90
Metropolitan 6, with mogul multiple socket	352489	225	68 00
Metropolitan 6, with Standard film socket	352490	225	69 00

"Safety First" Traffic Newels

For marking the centers of intersecting streets. These traffic posts are silent watchmen, always on the job. They may be equipped with flashers to produce an intermittent light if desired. Uses three ¾-inch foundation bolts.

Prices do not include globes, lamps, wiring or foundation bolts.

6-inch holder medium multiple socket	337935	175	46 90
8-inch holder medium multiple socket	337942	176	46 90
6-inch holder mogul multiple socket	341445	176	47 00
8-inch holder mogul multiple socket	337943	177	47 00
6-inch holder Standard film socket	337944	177	48 00
8-inch holder Standard film socket	337945	178	48 00

Edgewater Newels

This newel is an adaptation of the Edgewater design. It is furnished with or without red lenses and an auxiliary socket, mounted in the base. It can be furnished with 12-inch octagonal base when desired. Price includes eight inch globe-holder ring and sockets but not globe, wiring or foundation bolts.

Description	Style No.	Ship. Wt. Lb.	List Price
Edgewater 6, with medium multiple socket	352491	225	$69 90
Edgewater 6, with mogul multiple socket	352492	225	70 00
Edgewater 6, with Standard film socket	352493	225	71 00
Edgewater 6, with Bulls Eye lenses and medium multiple socket	352494	230	79 90
Edgewater 6, with Bulls Eye lenses and mogul multiple socket	352495	230	80 00
Edgewater 6, with Bulls Eye lenses and Standard film socket	352496	230	81 00

Commerce Newels

A massive newel designed especially for bridges and entrances to large buildings, etc. Prices include medium sockets, glassware and eagle ornamentation, but not foundation bolts. Uses four ⅝-inch expansion bolts.

One-light	353249	475	220 00
Three-light	353250	550	240 00
Five-light	353251	625	270 00

Sol-Lux Gate Post Newels

Prices below include medium sockets for side lamps and mogul sockets for center lamps, unless otherwise specified. Prices do not include globes, lamps, wiring or foundation bolts.

No. of Lights	Style No.	Wt. Lb. Each	List Price
1	340759	125	$37 50
2	341483	175	70 00
3	341439	175	70 00
4	341440	215	87 50
5	341441	215	87 50

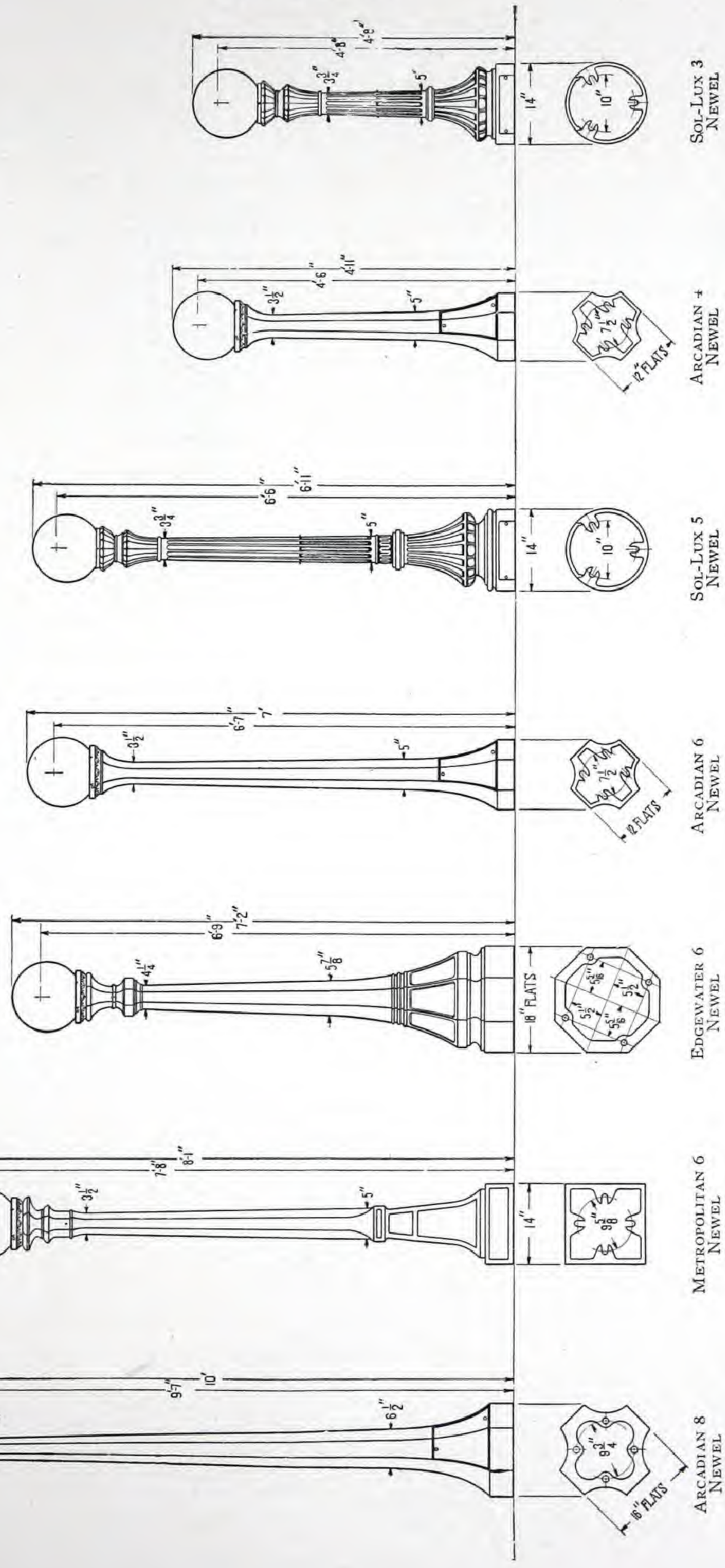
Sol-Lux Bridge Newels

Prices below include medium sockets for side lamps and mogul sockets for center lamps, unless otherwise specified. Prices do not include globes, lamps, wiring or foundation bolts.

No. of Lights	Style No.	Wt. Lb. Each	List Price
1	341445	175	$47 00
2	341446	225	77 00
3	341447	225	77 00
4	341448	265	92 00
5	341449	265	92 00

CAST-IRON NEWELS AND TRAFFIC STANDARDS—Continued

DIMENSIONS



SOL-LUX 3 NEWEL

ARCADIAN + NEWEL

SOL-LUX 5 NEWEL

ARCADIAN 6 NEWEL

EDGEWATER 6 NEWEL

METROPOLITAN 6 NEWEL

ARCADIAN 8 NEWEL

Dimensions are for reference only. For official dimensions apply to the nearest district office.

UNIVERSITY AND JEFFERSON NEWELS

University Newel

Jefferson Newel

These are short newels designed primarily for mounting upon brick or stone pillars at entrances to gateways, etc. The University Newel is designed to support an Octagonal type lantern of a modified Gothic type which harmonizes with its column. The Jefferson Newel is designed to support either an Octagonal Senior or Junior top with or without ornamentation. It has a Type A fitter at the top of its column. Furnished with either mogul or medium multiple socket as desired. When it is desirable to operate on a series circuit, series sockets can be furnished.

LIST PRICES

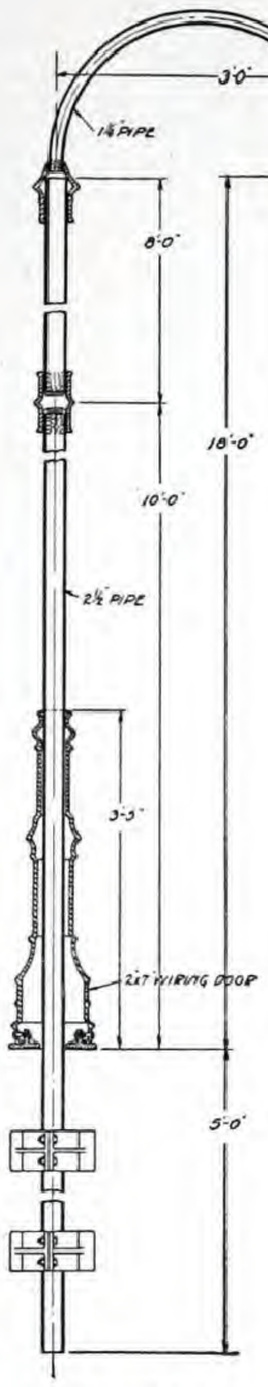
Description	Style No.	Ship. Wt. Lb. Ea.	List Price
University Newel complete with lantern, mogul multiple socket	351705	150	$ 60 00
University Newel complete with lantern, Standard film socket	352403	150	61 00
Jefferson Newel complete with Octagonal Senior lantern, mogul multiple socket	351704	150	120 00
Jefferson Newel complete with Octagonal Senior lantern, Standard film socket	352404	150	121 00
Jefferson Newel complete with Octagonal Junior lantern, mogul multiple socket	352405	150	55 00
Jefferson Newel complete with Octagonal Junior lantern, Standard film socket	352406	150	56 00
Jefferson Newel complete with Paragon Senior all glass lighting unit, mogul multiple socket	352407	150	56 00
Jefferson Newel complete with Paragon Senior all glass lighting unit, Standard film socket	352408	150	57 00
Jefferson Newel without lighting unit	354167	130	20 00

Order by Style Number

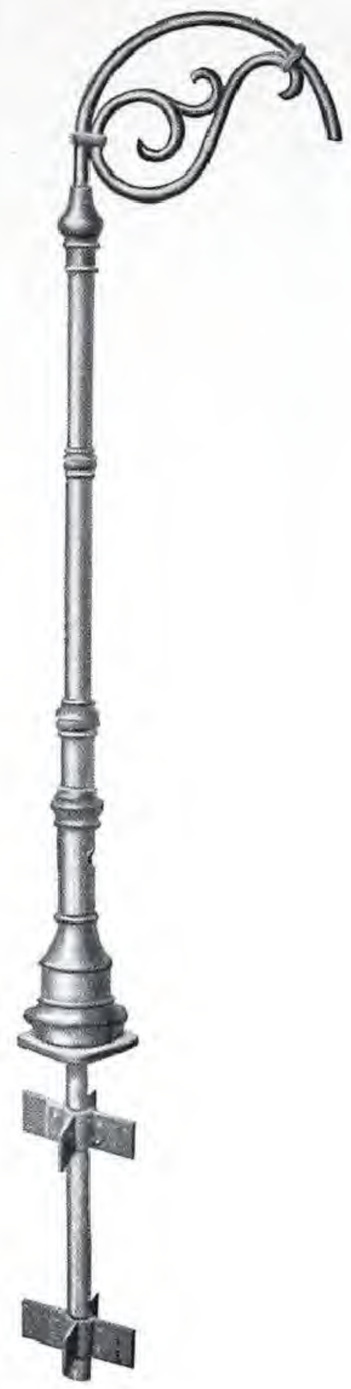
CAST-IRON ORNAMENTAL CROOKS

STREET CROOKS AND PARK CROOKS

ONE-LIGHT STREET CROOK



PARK CROOK DIMENSIONS



ONE-LIGHT PARK CROOK

STREET CROOKS

These are well built street lighting poles for supporting incandescent lamp fixtures. Height from ground to insulator, 18 feet. Other heights built to order. Diameter of base, 14 inches.

Insulators or 8-inch globe holders with medium screw sockets will be furnished on request. Uses four ¾x15-inch foundation bolts.

Description	No. of Lights	Style No.	Ship. Wt., Lb.	List Price
With 1¼-inch pipe bend only	1	340866	455	$105 00
With 1¼-inch pipe bend only	2	340867	475	110 00

PARK CROOKS

Park crooks are light but substantial poles for supporting incandescent lamp fixtures. Standard height from ground to insulator, 18 feet. Other heights built to order. On 14-foot and shorter heights, 4-foot ground sections will be supplied; on greater heights, 5-foot. If ground section is not wanted, deduct $7.50 from list and use four ¾-inch x 15-inch foundation bolts.

Description	No. of Lights	Style No.	Ship. Wt., Lb.	List Price
With 1¼-inch pipe bend only	1	340879	335	$70 00
With 1¼-inch pipe bend only	2	340895	355	75 00

Order by Style Number

CAST-IRON ORNAMENTAL CROOKS—Continued

INTERURBAN, ENTRANCE AND PLATFORM CROOKS

INTERURBAN CROOK

INTERURBAN SWAN NECK

ENTRANCE CROOK

PLATFORM CROOK

Interurban Crooks and Swan Necks

The column is made of 4-inch and 2½-inch pipe, with the 4-inch pipe extending 4 feet into the ground. The cast iron base has a door to make wiring easy. The crook is made of 1¼-inch pipe and holds the lamp 2 feet 3 inches from the column. The height to insulator is 14 feet. High voltage insulator, or 8-inch globe holder with medium screw socket will be furnished when so ordered. If scroll is not wanted, deduct $2.00 from list. For ground anchors, add $5.50 to list. If base is not desired, deduct $5.00 from list price.

Description	Style No.	Wt. Lb. Each	List Price
Crook with 1¼-inch pipe bend only.....	340988	220	$55 00
Swan Neck with 1¼-inch pipe bend only.	340989	20	45 00

Prices do not include lamps or wiring.

Entrance Crooks

Artistic fixtures for lighting entrances to parks, private grounds, etc. The 2½-inch pipe extends 4 feet into the ground.

Description	Style No.	Wt. Lb. Each	List Price
With 1¼-inch pipe bend only	340992	160	$45 00

Platform Crooks

A 1¼-inch pipe with cast-iron base and crook bend of ½-inch pipe holds the lamp 8 feet from the floor. Prices do not include reflectors.

Description	Style No.	Wt. Lb. Each	List Price
With ½-inch pipe bend only	340994	80	$18 00

Order by Style Number

HOLLOWSPUN CONCRETE LIGHTING STANDARDS

Application

The use of concrete as a component of pole construction has been growing in favor during recent years. Concrete, because of its close resemblance to stone, is particularly suitable for outdoor lighting, especially in residential districts, parks and along boulevards.

The chief requirements of concrete posts for street lighting service are strength, durability and beauty. All of these requirements are amply met by Hollowspun posts. The problem of obtaining ample tensile strength without sacrificing architectural beauty has been met by the application of the centrifugal method of manufacture.

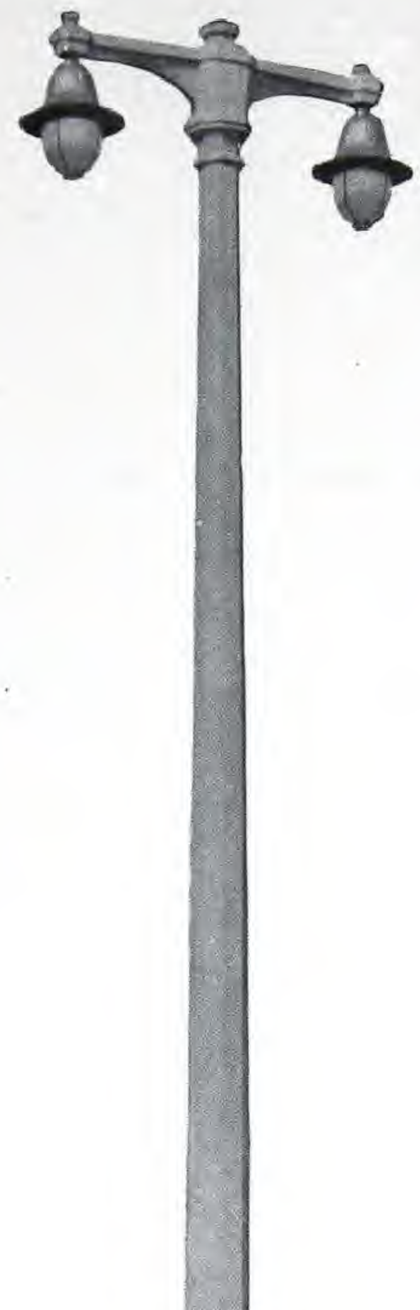
Description

Westinghouse Hollowspun street lighting standards or posts are of reinforced concrete. They are manufactured by a simple and unique process perfected after years of intensive research. After careful preparation the concrete is placed in steel molds in which the reinforcing elements or "cages" are assembled. These molds are then rotated at a high speed. This produces a dense, compact mass resembling stone in appearance and which for durability, toughness and strength is unexcelled.

The reinforcing structure consists of vertical steel bars and spiral wrappings. The diameters of these elements have been carefully calculated for each type of post, and their position in the molds is accurately maintained throughout the process of manufacture. In computing the strength of reinforcing elements, such factors as stresses due to handling during erection and other stresses, including that which might be caused by the impact of vehicles, are considered.

Manufacture by the centrifugal process compresses the aggregate closely around the mold and the reinforcing structure, thus assuring a product of very high tensile strength. The centrifugal action also forms a cylindrical opening which extends the entire length of the post; hence the name Hollowspun. Uniformity of contour is assured by the steel molds in which the posts are formed.

The foundation for Hollowspun posts is generally a monolithic part of the post itself which, with proper embedment, imparts the stability essential to street-lighting standards.



MONARCH 32

Suitable casings for use with the various types of Westinghouse ornamental lighting units are illustrated on page 880.

Construction

The improvement in concrete post construction effected by the perfection of the Hollowspun process can only be fully appreciated when it is compared with the product of other processes.

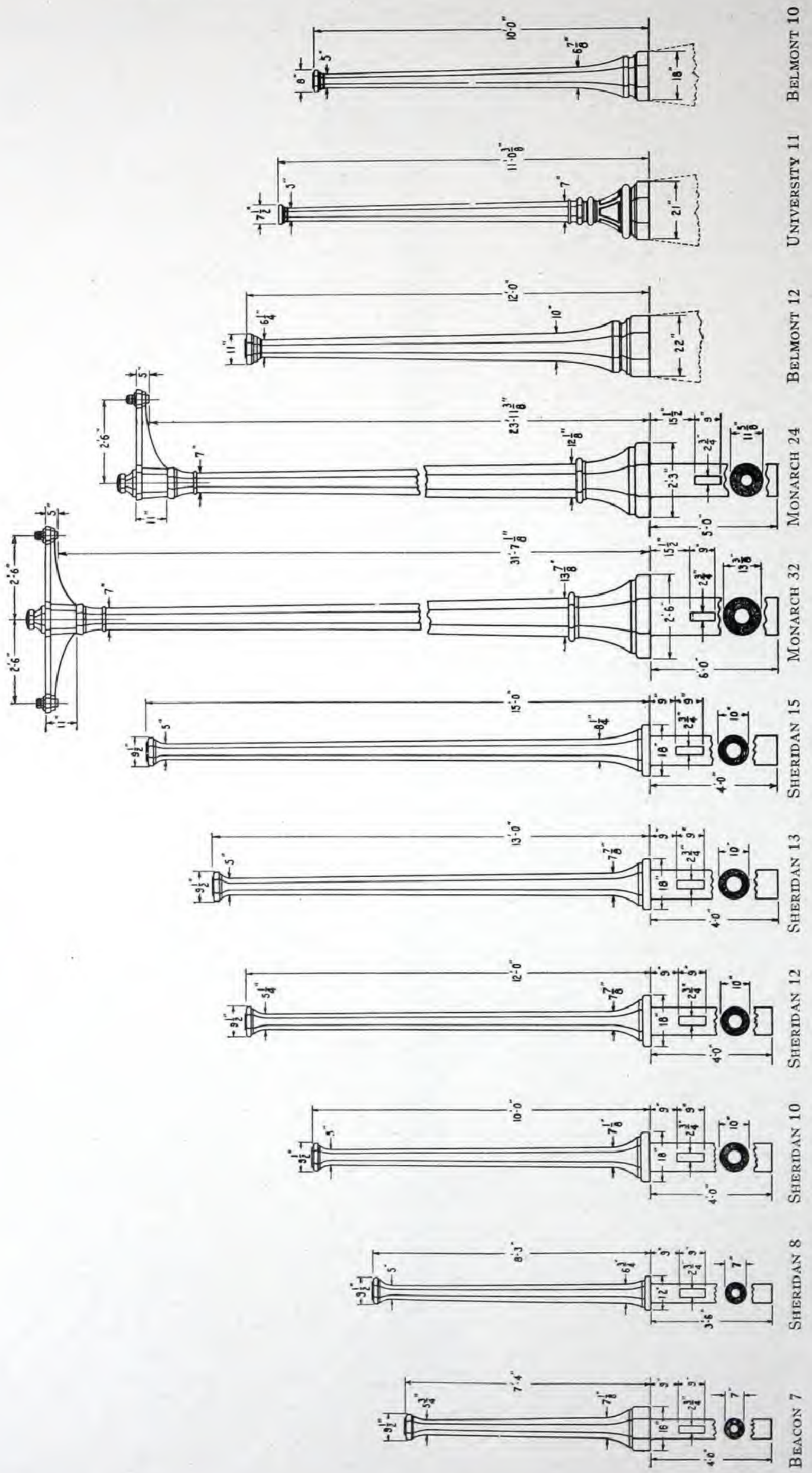
Reinforced concrete post construction requires a relatively high percentage of tensile reinforcement. This carries with it the need of care in keeping down bond stresses, necessitating a careful distribution of the steel. On account of the comparatively small cross-section, adequate shear reinforcement is needed as well. This reinforcement, commonly called a cage, is so dense that to try to force concrete into place by tamping through an open side of the form is out of the question. To try to do it from the end by either the spading or the vibration method is likewise difficult and impractical. In either method the results are always uncertain.

In the Hollowspun process, the reinforcing steel, after being accurately computed for the particular class of pole to be made, is held rigidly in the place it was designed to occupy, so that the actual tests of strength check the design very closely. The complete reinforcing cage is then placed in a horizontal form and held at the desired distance from the surface of the form by concrete buttons which later become part of the finished wall of the pole. Concrete is then added and the entire form rotated at high speed, thus developing centrifugal force sufficient to compact the concrete into a very dense wall, leaving a hollow opening in the center which extends the entire length of the pole.

Hollowspun street lighting standards are made in nine different heights or types and five different forms or styles.

The permanence of reinforced concrete poles is beyond question. So far as is known, they are not subject to the ordinary action of the elements. Water tends to harden concrete and does not affect the reinforcing steel since it is entirely embedded and therefore inaccessible to it and the air. The poles made by the centrifugal process have a decided advantage in freedom from electrolytic corrosion, since the concrete is much more dense than is possible in concrete

HOLLOWSPUN CONCRETE LIGHTING STANDARDS—Continued



Dimensions are for reference only. For official dimensions apply to the nearest district office.

HOLLOWSPUN CONCRETE LIGHTING STANDARDS—Continued

UNIVERSITY 11

ST. LOUIS 13

SHERIDAN 13

SHERIDAN 12

BELMONT 10

poles made by hand methods. While the reinforcing used can be grounded in poles which are expected to carry heavy currents, this is not ordinarily considered necessary.

Distinctive Features

Economy—In Hollowspun posts the foundation is an integral part of the post, hence the building of foundations is unnecessary. All that is necessary is to dig a hole and set the post therein. This allows the setting of posts in any kind of weather and facilitates their erection.

From a maintenance standpoint Hollowspun posts are extremely economical. There being no metallic parts exposed to the weather there is nothing to rust, hence painting and other maintenance charges are eliminated.

The comparative lightness of Hollowspun posts is attained without sacrificing strength, and reduces freight charges to a minimum.

Appearance—The centrifugal method of post manufacture produces a post of slender appearance which has the same

HOLLOWSPUN CONCRETE LIGHTING STANDARDS—Continued

or even greater tensile strength than a larger post made by any other method. Hence in Hollowspun posts beauty without bulk is an outstanding characteristic.

The aggregate used in making Hollowspun posts imparts an attractive appearance and thus eliminates the need of elaborate designs or scroll work. The black and white aggregate closely resembles cut granite in appearance. When desired an aggregate of red Wisconsin granite may be used.

LIST PRICES

Hollowspun Standards are regularly furnished in a black and white granite aggregate. Other aggregates can be supplied at an additional charge.

List prices and style numbers of standards do not include casings or lighting units.

Description	Style No.	Ship. Wt. Lb.	List Price
Sheridan 15 Standard*	346821	850	$78 00
Sheridan 13 Standard	346823	750	70 00
Sheridan 12 Standard	346819	725	67 00
Sheridan 10 Standard	346820	675	60 00
Sheridan 8 Standard	346824	600	56 00
St. Louis 13 Standard	346920	750	70 00
Belmont 10 Standard	346826	650	60 00
Belmont 12 Standard	346836	1000	80 00
Beacon 7 Standard	346795	625	53 00
Monarch 32 Standard	346749	4300	180 00
Monarch 24 Standard	346785	3000	150 00
University 11 Standard	346829	750	64 00

CASINGS FOR HOLLOWSPUN STANDARDS

St. Louis Casing

Belmont Casing

Sheridan Casing

Amherst Casing

Lighting units are mounted on concrete standards by means of casings or adapters rigidly attached to the standard. Three threaded inserts are cast on top of the column and the adapter is held by screws threaded into the inserts. Adapter and casings are rust-proof to prevent discoloration of the standard.

LIST PRICES

Description	Style No.	Ship. Wt., Lb.	List Price
St. Louis casing	352446	12	$30 00
Belmont casing	351760	5	10 00
Sheridan casing	352445	8	14 00
Amherst casing	352497	8	14 00

*The numeral following the name of standard indicates the approximate height in feet of the column only.

Order by Style Number

ORNAMENTAL WALL BRACKETS

UNIVERSITY

BELVEDERE

FLORENTINE

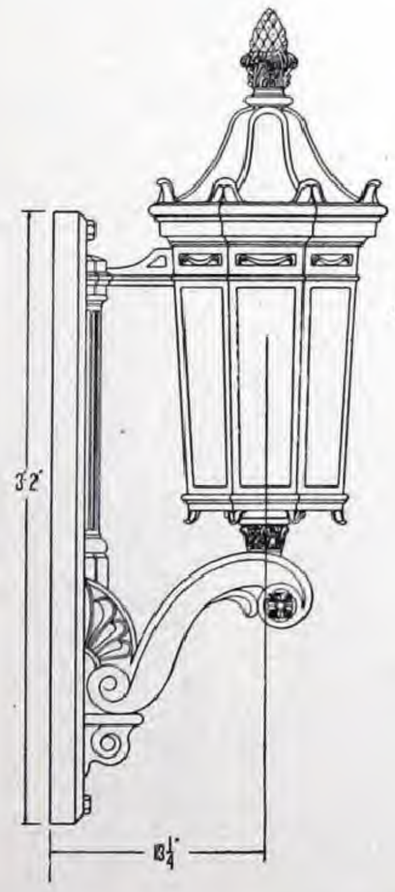
These brackets are designed to support any type of senior or junior lighting unit and when conditions warrant may be equipped with Bi-lux refractors. In locations where the liability of breakage is great, the Octagonal type of lighting unit is recommended, inasmuch as the glass panels can be purchased locally and the replacing costs but a few cents apiece. Units can be furnished with either mogul or medium multiple sockets or series sockets when required.

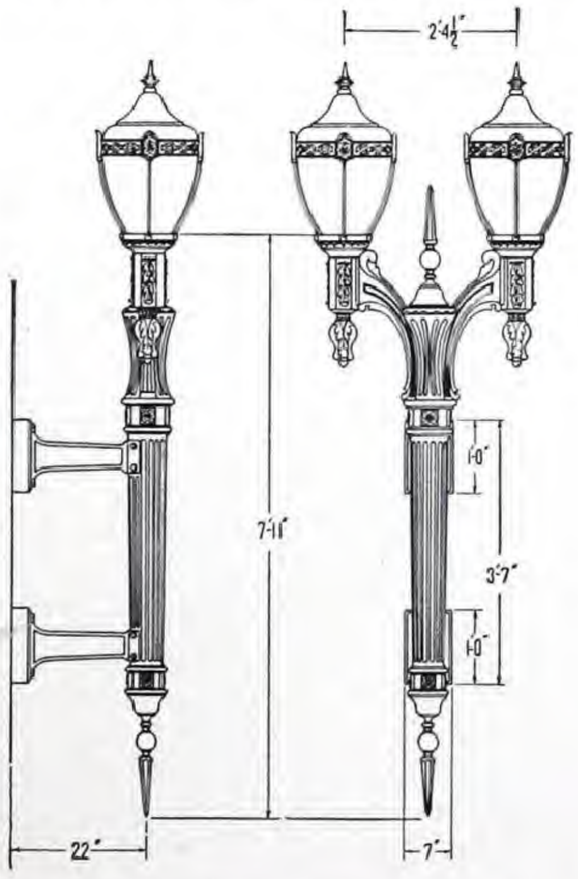
The Belvedere bracket may be equipped with any type of lighting unit. See pages 891-896 for prices.

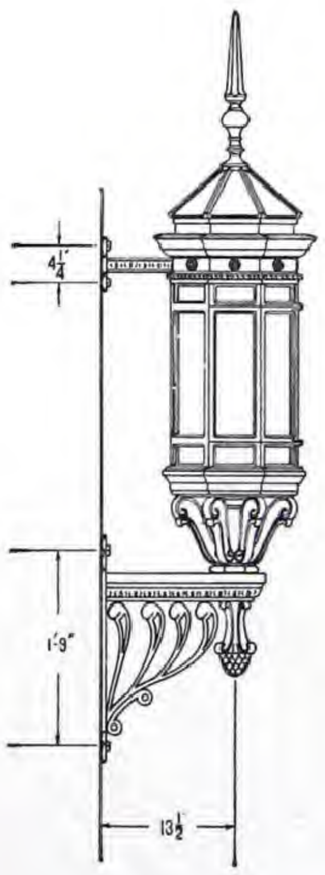
LIST PRICES

Description	Style No.	Ship. Wt. Lb., Each	List Price
Belvedere bracket complete with lighting units, mogul multiple sockets	351703	450	$228 00
Belvedere bracket without lighting units	352480	160	142 00
Florentine bracket complete with lantern, mogul multiple socket	351741	275	300 00
University bracket complete with lantern, mogul multiple socket	351701	200	110 00

DIMENSIONS IN FEET AND INCHES





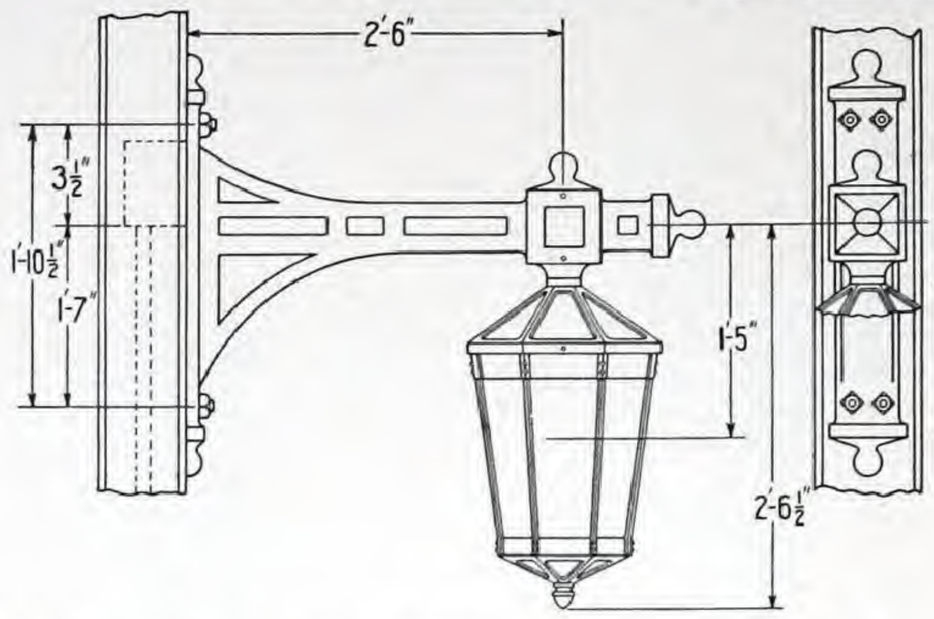


Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

ORNAMENTAL WALL BRACKETS—Continued

Colonial Brackets



COLONIAL BRACKET WITH OCTAGONAL JUNIOR PENDANT

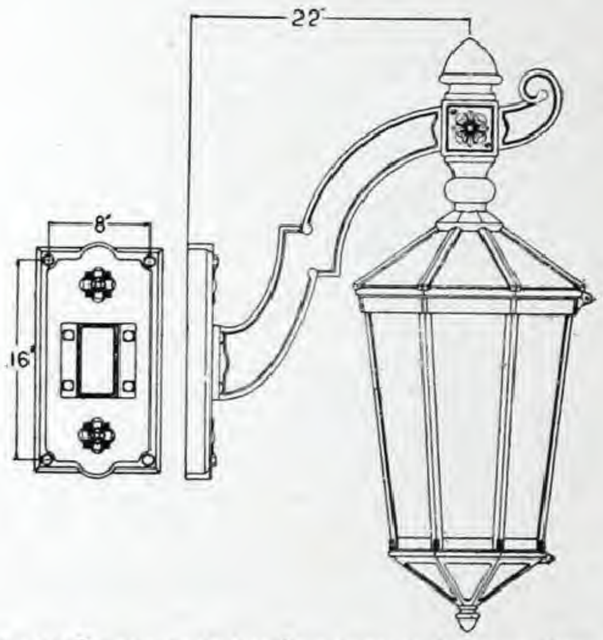
The exterior of churches, public buildings, railroad depots, etc., may be effectively lighted with units mounted on ornamental brackets.

The Colonial bracket as illustrated is supporting an Octagonal Junior pendant lighting unit. Price includes bracket only. See pages 891–896 for prices on lighting units.

Style No.	Ship. Wt., Lb.	List Price
351402	94	**$30 00**

Santiago Brackets

SANTIAGO BRACKET WITH OCTAGONAL JUNIOR PENDANT



SANTIAGO BRACKET WITH OCTAGONAL SENIOR PENDANT

The Santiago brackets as illustrated are supporting Octagonal pendent lighting units. Price includes bracket only. See pages 891–896 for prices on lighting units.

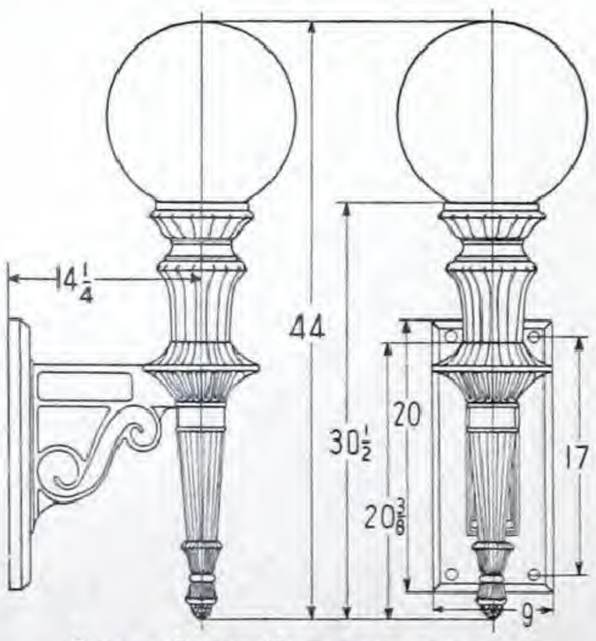
Style No.	Ship. Wt., Lb.	List Price
351401	98	**$29 00**

Commerce Brackets

A massive fixture of distinctly artistic and classical design, arranged for ball globes in one-light, three-light and four-light units. They are particularly adapted for lighting entrances to fine structures.

Prices include bracket with medium socket for side globes and mogul socket for top globes, but do not include globes; 6x10 globes are recommended for side, and 6x12 for top. See pages for prices on globes.

Description	Style No.	Ship. Wt., Lb	List Price
One light	**341453**	90	**$51 50**
Three light	**341454**	145	**60 00**
Four light	**341455**	155	**65 00**



SINGLE-LIGHT COMMERCE BRACKET

Dimensions are for reference only. For official dimensions apply to the nearest district office.

4-LIGHT COMMERCE BRACKET

Order by Style Number

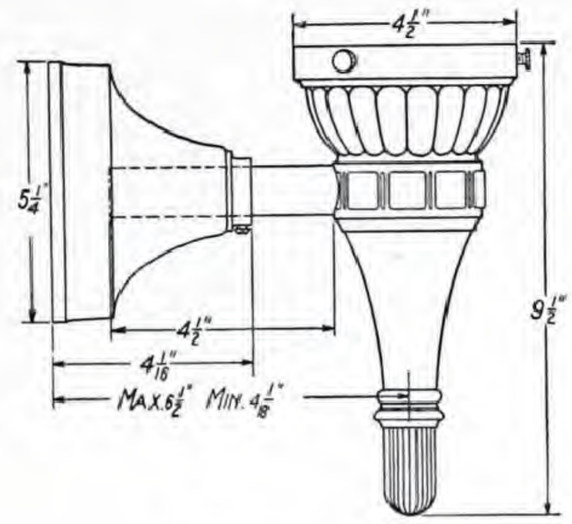
ORNAMENTAL WALL BRACKETS—Continued

MIDGET BRACKET

Midget Brackets

A light cast-iron bracket designed for small sizes of lamps. Has a threaded stem for attachment to crowfoot or conduit. Equipped with 4¼-inch holder and medium socket, but not wired and without globe.

Style No.	Ship. Wt., Lb.	List Price Each
341451	7	**$5 25**



MIDGET BRACKET

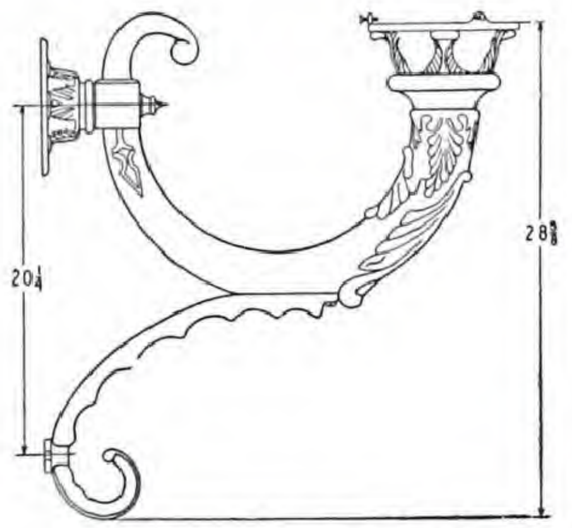
REVERSIBLE BRACKET

Reversible Brackets

When desired this bracket may be reversed. In this position it has the same artistic lines and correct proportions as in the position illustrated. Fitted with 8-inch globe holder.

Prices do not include globe or wiring.

Description	Style No.	Ship. Wt. Lb.	List Price Each
With medium multiple socket	**340966**	65	**$25 90**
With mogul multiple socket	**341452**	65	**26 00**



REVERSIBLE BRACKET

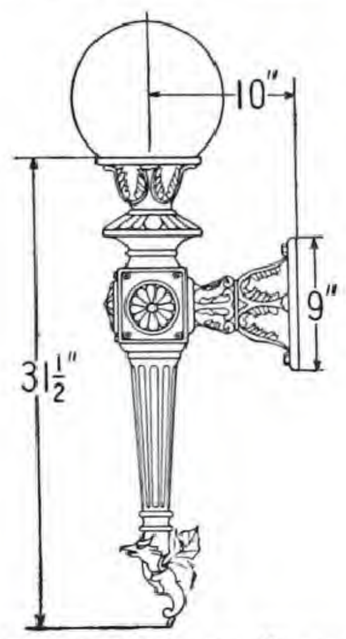
3-LIGHT CORRIDOR BRACKET

Corridor Brackets

These cast-iron brackets are of artistic design and adaptable to corridors or arcades in office buildings, schools, public buildings, etc.

Prices include globe-holders and medium sockets, but not globes or wiring.

Description	Style No.	Ship. Wt. Lb.	List Price Each
One-light	**340963**	65	**$25 00**
Three-light	**340964**	110	**27 00**
Four-light	**340965**	135	**43 50**



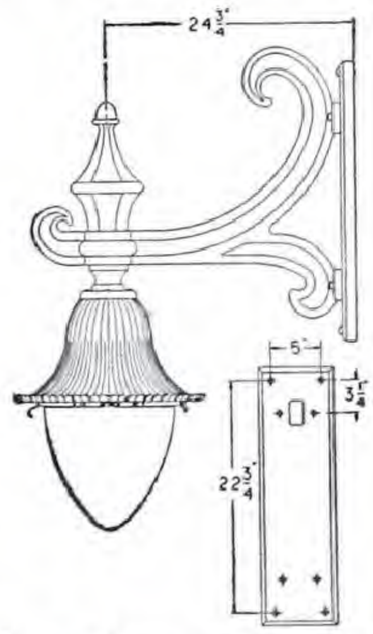
1-LIGHT CORRIDOR BRACKET

DELPHI REVERSIBLE BRACKET

Delphi Reversible Brackets

This bracket may be used in the position illustrated or may be reversed if desired. It supports a Paragon Pendant which is designed for use with either a Holophane refractor or a Polaris globe as illustrated.

Description	Style No.	Ship. Wt. Lb.	List Price Ea.
Delphi Bracket	**352447**	100	**$30 00**



DELPHI REVERSIBLE BRACKET

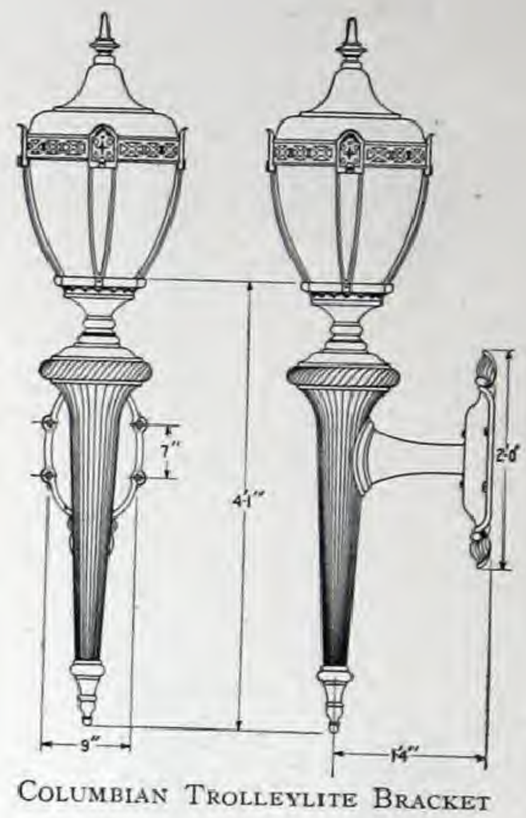
Dimensions are for reference only. For official dimensions apply to the nearest district office

Order by Style Number

TROLLEYLITE BRACKETS

COLUMBIAN TROLLEYLITE BRACKET

TROLLEY POLE EQUIPPED WITH COLUMBIAN BRACKETS, METROPOLIS BASE AND ACORN FINIAL



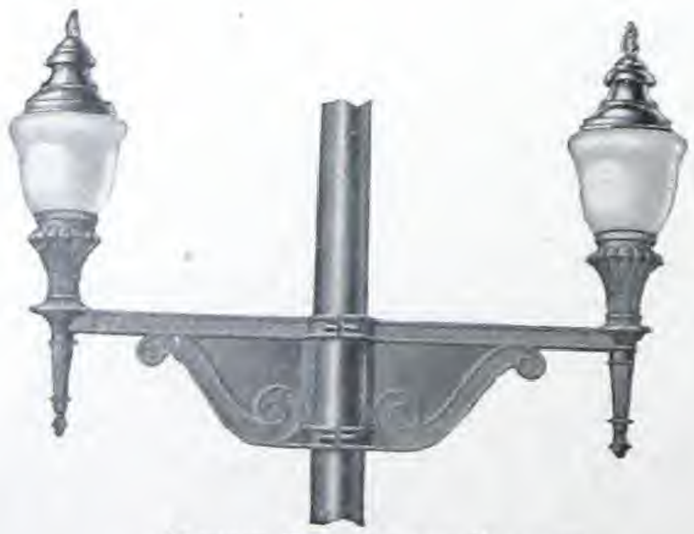
COLUMBIAN TROLLEYLITE BRACKET

When conditions warrant the purely utilitarian trolley pole may be utilized as a street lighting unit. This is accomplished by the addition of either single or double ornamental brackets.

Westinghouse brackets are designed to support any Westinghouse lighting unit. Different styles of brackets are available so that a harmonious combination can be very easily secured. The use of trolleylite brackets provides an economical and attractive method of lighting streets on which trolley poles are already in place. The same types of lighting units may be used on both standards and trolleylite brackets, thus making the lighting units uniform in appearance throughout the city. Prices on double brackets will be furnished on request.

Further ornamentation of trolley poles may be secured by the addition of ornamental bases, etc. See page 887 for this equipment.

Style numbers cover brackets only; for prices on lighting units see pages 891 to 896. Prices on steel trolley poles will be furnished on application, For data on trolley poles see page 886.



AVENUE TROLLEYLITE BRACKET

PARKWAY TROLLEYLITE BRACKET

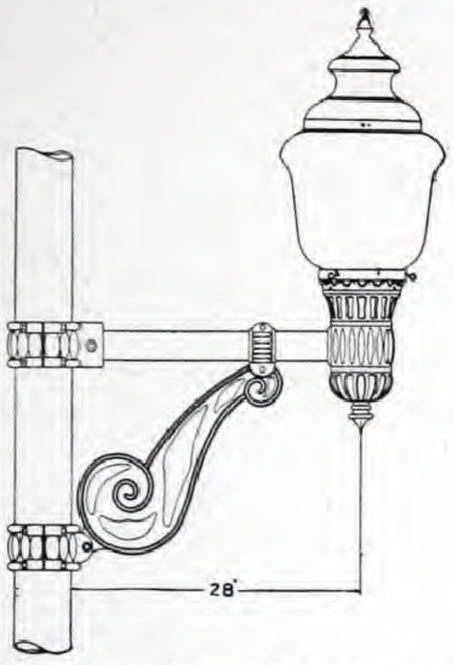
Dimensions are for reference only. For official dimensions apply to the nearest district office.

TROLLEYLITE BRACKETS—Continued

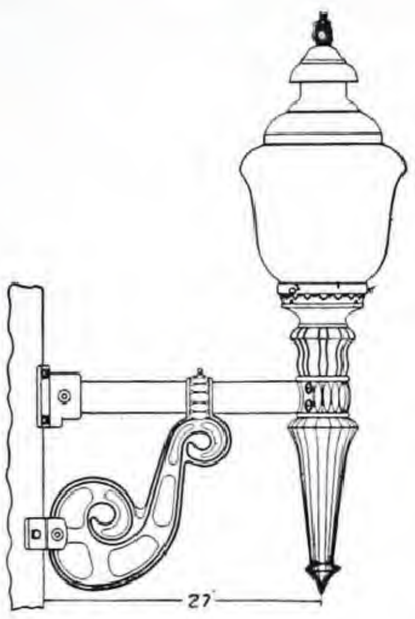
ZENITH TROLLEYLITE BRACKET FOR WOODEN POLE MOUNTING

SOL-LUX JUNIOR TROLLEYLITE BRACKET FOR STEEL POLE MOUNTING

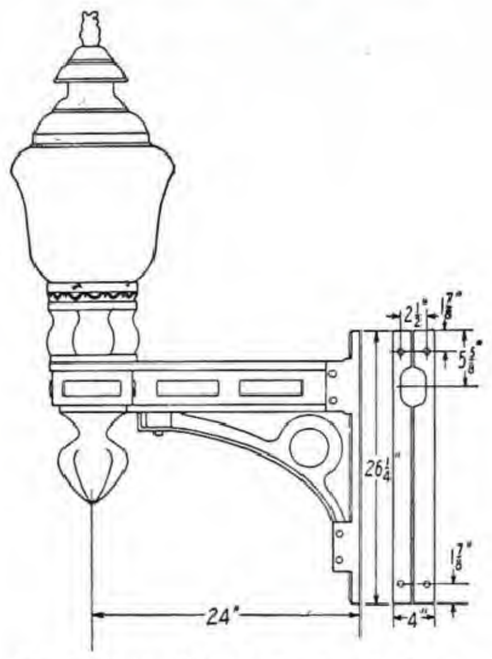
MUNICIPAL TROLLEYLITE BRACKET FOR STEEL POLE MOUNTING



ZENITH TROLLEYLITE BRACKET FOR STEEL POLE MOUNTING



SOL-LUX JUNIOR TROLLEYLITE BRACKET FOR WOODEN POLE MOUNTING



MUNICIPAL TROLLEYLITE BRACKET FOR WOODEN POLE MOUNTING

Avenue Trolleylite Brackets

Description	Style No.	Ship. Wt. Lb.	List Price
For 4-inch pipe	340972	220	$90 00
For 5-inch pipe	340973	220	90 00
For 6-inch pipe	340974	220	90 00
For 7-inch pipe	340975	220	90 00

Parkway Trolleylite Brackets

Similar to the Avenue Trolleylite bracket, except shorter and lighter.

Distance from pole to center of globe, 30 inches. Height over all, 50 inches.

For 4-inch pipe	340980	190	80 00
For 5-inch pipe	340981	190	80 00
For 6-inch pipe	340982	190	80 00
For 7-inch pipe	340983	190	80 00

Sol-Lux Junior Trolleylite Brackets

For 4-inch pipe	342088	160	62 50
For 5-inch pipe	342089	160	62 50
For 6-inch pipe	342090	160	62 50
For 7-inch pipe	342091	160	62 50
For wooden poles	342985	160	62 50

Columbian Trolleylite Brackets

Description	Style No.	Ship. Wt. Lb.	List Price
For 4-inch pipe	352381	160	$100 00
For 5-inch pipe	352382	160	100 00
For 6-inch pipe	352383	160	100 00
For 7-inch pipe	352384	160	100 00
For wooden pole	352380	160	100 00

Zenith Trolleylite Brackets

For 4-inch pipe	352386	160	100 00
For 5-inch pipe	352387	160	100 00
For 6-inch pipe	352388	160	100 00
For 7-inch pipe	352389	160	100 00
For wooden pole	352385	160	100 00

Municipal Trolleylite Brackets

For 4-inch pipe	340967	150	80 00
For 5-inch pipe	340968	150	80 00
For 6-inch pipe	340969	150	80 00
For 7-inch pipe	340970	150	80 00
For wooden poles	340971	150	80 00

The above brackets are complete with casing but without globe rings or lighting units. For lighting units see pages 891–896.
If mogul multiple socket is used, deduct $1.00 list for each socket; for medium multiple socket, deduct $1.10 each list.
Prices do not include poles but prices on tubular steel trolley poles will be furnished on request.
The brackets above can also be furnished as double arm brackets or can be arranged for mounting on expanded metal poles.
Prices will be furnished on request.
Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

TUBULAR STEEL TROLLEY POLES

Tubular steel poles are used in street lighting when trolley line construction must necessarily be combined with the street lighting system. Ornamental lighting brackets and ornamental pole fixtures for this purpose are listed and illustrated on other pages of this catalogue. The following table gives the essential details of the tubular steel poles most often used in this work. A 30-foot pole of seven-inch, six-inch, and five-inch sections is used most. All of these poles are made of standard weight pipe. Diameters are indicated on the following page. Prices on request.

PHYSICAL DATA

Length in Feet	Length of Sections in Feet: 4-inch Dia.	5-inch Dia.	6-inch Dia.	7-inch Dia.	8-inch Dia.	9-inch Dia.	Weight Lb.	Max. Vertical Load, Lb.
25	4	5	19	....	....	....	477	1092
25	..	4	5	19	....	....	600	1569
25	..	....	4	5	19	....	737	2161
25	..	....	....	4	5	19	881	2875
26	4	6.5	18.5	....	....	....	490	1032
26	..	4	6.5	18.5	....	....	617	1484
26	..	....	4	6.5	18.5	....	758	2044
26	..	....	....	4	6.5	18.5	907	2719
27	5	6.5	18.5	....	....	....	500	980
27	..	5	6.5	18.5	....	....	631	1408
27	..	....	5	6.5	18.5	....	777	1940
27	..	....	....	5	6.5	18.5	931	2580
28	5	7	19	....	....	....	517	932
28	..	5	7	19	....	....	653	1339
28	..	....	5	7	19	....	803	1845
28	..	....	....	5	7	19	962	2454
29	4	7	21	....	....	....	544	889
29	..	4	7	21	....	....	685	1277
29	..	....	4	7	....	....	841	1759
29	..	....	....	4	7	21	1006	2340
30	5	7	21	....	....	....	555	849
30	..	5	7	21	....	....	700	1220
30	..	....	5	7	21	....	860	1681
30	..	....	....	5	7	21	1030	2236
31	5	10.5	18.5	....	....	....	559	813
31	..	5	10.5	18.5	....	....	707	1168
31	..	....	5	10.5	18.5	....	871	1609
31	..	....	....	5	10.5	18.5	1045	2141
32	7	7	21	....	....	....	577	780
32	..	7	7	21	....	....	729	1120
32	..	....	7	7	21	....	898	1544
32	..	....	....	7	7	21	1077	2053
33	7	10.5	18.5	....	....	....	580	749
33	..	7	10.5	18.5	....	....	737	1076
33	..	....	7	10.5	18.5	....	909	1483
33	..	....	....	7	10.5	18.5	1092	1973
34	7	10.5	19.5	....	....	....	599	721
34	..	7	10.5	19.5	....	....	760	1036
34	..	....	7	10.5	19.5	....	938	1427
34	..	....	....	7	10.5	19.5	1126	1898
35	7	10	21	....	....	....	621	695
35	..	7	10	21	....	....	786	998
35	..	....	7	10	21	....	969	1375
35	..	....	....	7	10	21	1162	1829

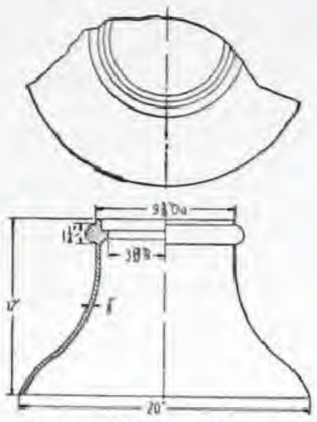
ORNAMENTAL EQUIPMENT FOR TROLLEY POLES

ACORN FINIAL

ACORN TROLLEY POLE FINIALS

A cast-iron ornament for the top of tubular steel trolley poles.

Description	Style No.	Ship. Wt. Lb.	List Price
For 2½-inch pipe	335603	3	$2 50
For 3-inch pipe	339608	5	3 00
For 4-inch pipe	339387	8	3 50
For 5-inch pipe	339718	10	4 00
For 6-inch pipe	350015	15	4 50

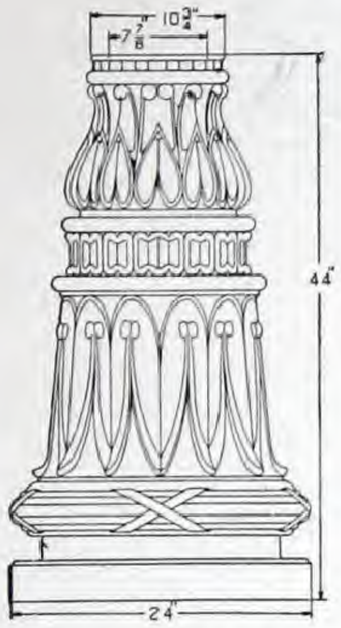


PLAIN WHEEL GUARD

PLAIN WHEEL GUARDS

A cast-iron base to slip over tubular steel poles to protect the pole from being damaged by the wheels of vehicles.

For 6-inch pipe	351398	68	21 00
For 7-inch pipe	351399	68	22 00
For 8-inch pipe	351400	68	23 00



METROPOLIS TROLLEY BASE

METROPOLIS TROLLEY BASES

For ornamenting tubular steel trolley poles. Designed to slip over the pole during erection.

For 5-inch pipe	353172	375	100 00
For 6-inch pipe	335597	385	104 00
For 7-inch pipe	335595	410	108 00
For 8-inch pipe	353173	430	112 00
For 9-inch pipe	335596	450	116 00

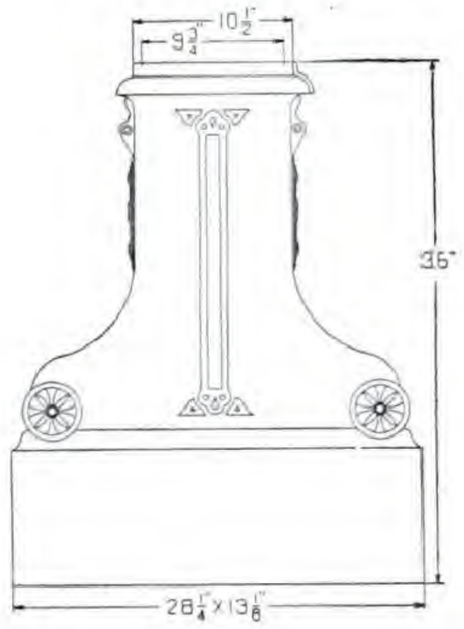
METROPOLIS TROLLEY BASE

WINSLOW TROLLEY BASE

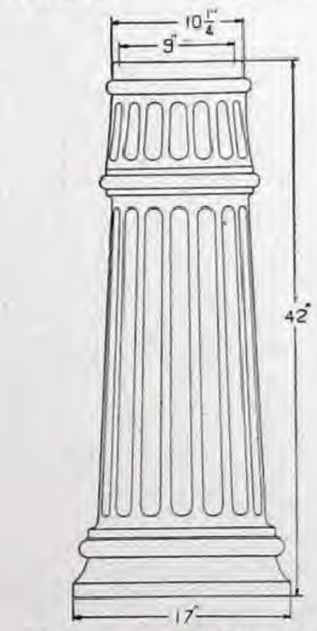
WINSLOW TROLLEY BASES

An ornamental base of attractive design which is made in two sections which can be easily bolted together. Has an interchangeable collar at the top which allows it to be used with poles of different diameters. The bottom is eccentric in shape and has ample space for the installation of safety coils when required.

Description	Style No.	Ship. Wt. Lb.	List Price
For 7-inch pipe	352363	130	$70 00
For 8-inch pipe	352364	130	72 00
For 9-inch pipe	352365	130	74 00



WINSLOW TROLLEY BASE

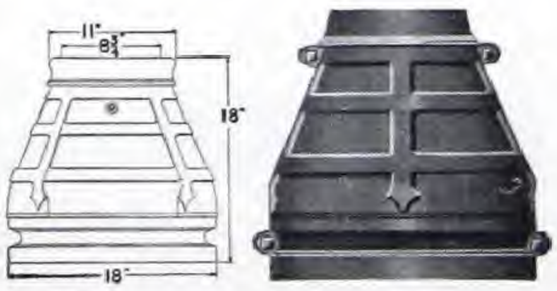


HAWTHORNE TROLLEY BASE

HAWTHORNE TROLLEY BASES

A light weight base for sliding over trolley poles of six, seven and eight inch diameters.

For 6-inch pipe	353810	120	45 00
For 7-inch pipe	352366	135	47 00
For 8-inch pipe	352367	150	49 00



DUQUESNE TROLLEY BASE

DUQUESNE TROLLEY BASES

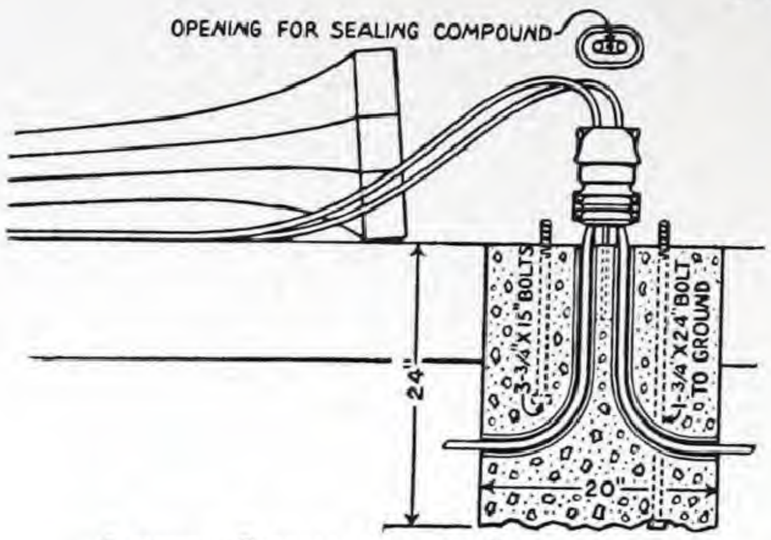
For 5-inch pipe	351762	100	25 00
For 6-inch pipe	351763	100	25 00
For 7-inch pipe	351764	100	25 00

Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

ACCESSORIES FOR CAST-IRON STANDARDS

POTHEADS



SHOWING INSTALLATION OF POTHEAD BY THE USE OF IRON SUPPORT IMBEDDED IN CONCRETE FOUNDATION

DISCONNECTING POTHEAD WITH GROUND SUPPORT

PARTS FOR DISCONNECTING POTHEAD

It is necessary to bring the distribution cable above the surface of the ground at each post location and open it for making connections to the inside wiring of the posts. In installations of this kind, static discharges may occur frequently. These will result in ultimately breaking down the insulation, causing interruption of service unless some means is provided to carry the static current to ground.

Such troubles are entirely eliminated by installing a pothead at the base of each post. This device clamps together the lead and steel coverings of the cable and connects them to ground through the base of the post or the ground support as illustrated. The porcelain body forms a receptacle where the cables are connected and sealed in with insulating compound.

The Disconnecting Pothead has a two-piece porcelain body so arranged that in the event of breakage of a post the upper part of the pothead is pulled off, thus disconnecting the wires in the post from the underground system, which transmits power at a voltage which would endanger the lives of pedestrians or vehicle drivers coming in contact with them in the event that the post was broken. Also, provision is made for the re-establishment of the circuit through contacts in the lower part of the pothead, with the result that the remaining lamps in the system continue in operation.

An iron bracket support should be imbedded in the concrete foundation, and the connections to the cable made before raising the column upon its foundation.

Description	Style No.	Wt. Lb., Each	List Price
Simple pothead complete	342643	16	$6 00
Consists of five parts as follows:			
Simple pothead porcelain	336052	3	1 00
Pothead body casting	336157	5	2 10
2 clamps	336158	1	1 25
Ground support	336127	5	1 50
Sealing compound (1-lb.)	341911	1	15
Disconnecting pothead complete	343165	17	12 00
Consists of five parts as follows:			
Disconnecting pothead porcelain	336130	4	7 00
Pothead body casting	336157	5	2 10
2 clamps	336158	1	1 25
Ground support	336127	5	1 50
Sealing compound (1 lb.)	341911	1	15
Ground test plug	336045	1	3 00

HEAVY DUTY EXPANSION BOLTS

These bolts may be used whenever posts are to be fastened to concrete sidewalks and when brackets are to be mounted on concrete, brick or stone walls. Their holding power exceeds that of standard machine bolts. They save 50 to 75 per cent of drilling costs. Furnished in sets of four.

BOLT WITH PRIMARY AND ONE SECONDARY EXPANSIVE UNIT

SECTIONAL VIEW SHOWING BOLT WITH PRIMARY EXPANSION SLEEVE, ONE IRON SPACING SLEEVE, AND ONE SECONDARY EXPANSIVE UNIT

Length Inches	Diameter Inches	Style No.	Ship. Wt. Lb., per 100	List Price per Set
4½	⅝	335576	70	$1 25
6	⅝	335577	80	1 50
9	⅝	335578	90	1 75
12	⅝	335579	100	2 00
4 Spacing sleeves extra		335580	20	20
4 Sec. expansive units		335581	30	90

FOUNDATION BOLTS

For foundation bolts see Machine Bolts listed in Section 6-E. **Bolts 15 inches** long and ¾-inch diameter are recommended for all standards.

Order by Style Number

JIFFY GLOBE-HOLDERS

FIG. 1—OPENED POSITION

Application

The Jiffy globe-holder is designed to eliminate globe breakage and economize in the maintenance of ornamental street lighting systems. This device is arranged to hold the globe more securely than any other type of holder on the market, yet a simple rotating movement permits instant removal of the globe. It is intended for use with ornamental upright globes of various designs having standard 8-inch and 9⅜-inch bottom fitters. It is not adapted for use with lantern type lighting units or those having an ornamental framework surrounding the globe.

The Jiffy globe-holder can be mounted directly on any lighting standard, newel, bracket or casing having a type A fitter. For other standards special adapters will be furnished.

Distinctive Features

The Jiffy globe-holder, as its name implies, saves much time in the cleaning and maintenance of lighting units.

Adjustment is provided for variations in tolerance in globes of various sizes. This adjustment is permanent, the adjusting screws being automatically locked in position.

Jiffy globe-holders are in service in a number of cities and have brought about substantial savings in maintenance costs. In one city the annual cost of replacing broken globes amounted to approximately five dollars per standard. The use of the Jiffy globe-holder reduced this loss to almost nothing. It was discovered that the cleaning crew could clean twice as many globes as before and so with the same crew, globes were cleaned at shorter intervals, resulting in greatly improved appearance and efficiency of the lighting system.

Operation

The Jiffy globe-holder is instantaneous in operation. Two lugs are provided on the outer edge of the globe seat to facilitate opening and closing. To remove the globe it is only necessary to rotate the globe seat in a counter clockwise direction through an angle of about 30°. This motion actuates the clips which release the globe by taking the position shown by the dotted lines in Fig. 2. With the clips in this position the globe is free to be removed. To lock the globe it is only necessary to rotate the globe seat in a clockwise direction. This motion actuates the clips to grip the globe firmly in position. The rotating parts are automatically locked in both open and closed positions and can be changed by manual means only.

Construction

The Jiffy globe-holder is scientifically designed to prevent breakage of globes due to vibration, jars or impacts to which street lighting standards are often subjected. It is constructed to absorb all shocks which ordinarily destroy glassware. Globes are held in place so firmly that breakage from windstorms is entirely eliminated. The glassware rests on a resilient bronze seat and is secured in position by sliding phosphor bronze clips on the inside of the globe. There are no screws to come in contact with the glass, to rust tight, or to work loose through vibration.

Expansion and contraction due to temperature variation do not materially change the grasp upon the globe or affect the operation of the holder. Water cannot collect and freeze on the moving parts and prevent removal of globe.

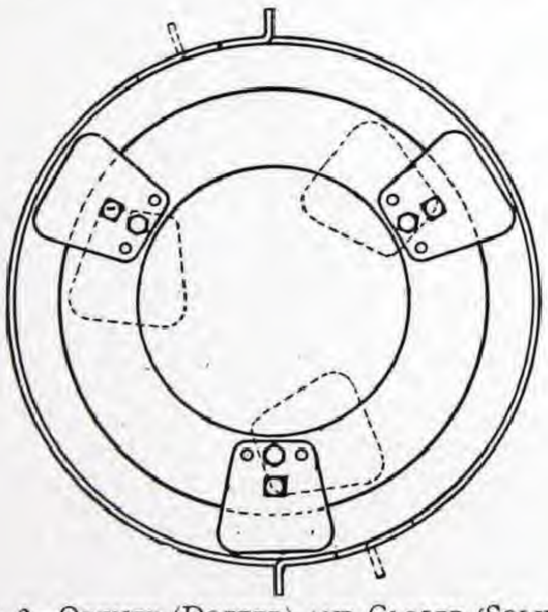


FIG. 2—OPENED (DOTTED) AND CLOSED (SOLID) POSITIONS OF HOLDING CLIPS

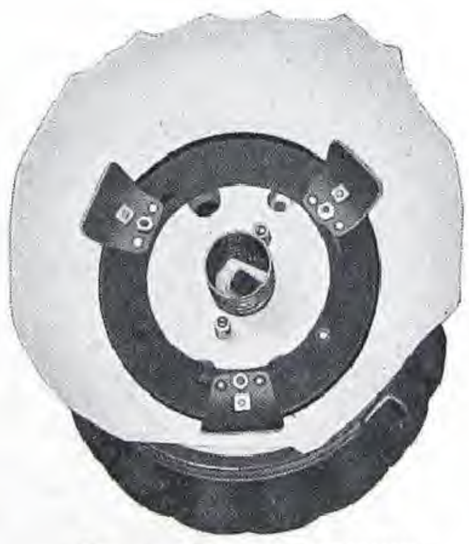


FIG. 3—CLOSED POSITION, LOOKING DOWNWARD

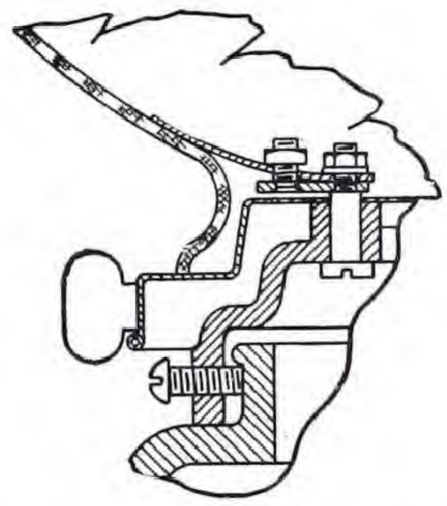


FIG. 4—SHOWING GLOBE LOCKED IN HOLDING POSITION

LIST PRICES

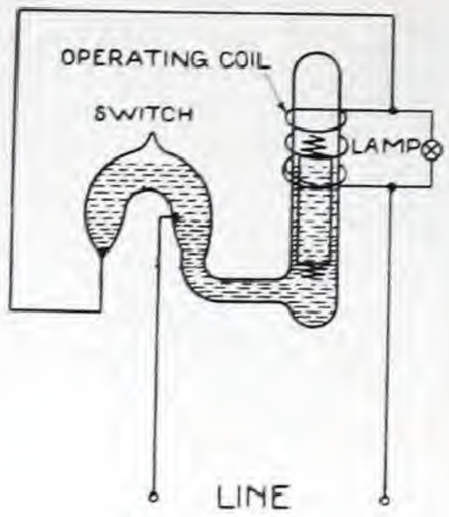
Description	Style No.	Ship. Wt., Lb.	List Price Each
For globes with 8-inch bottom fitters	346124	4	$10 00
For globes with 9⅜-inch bottom fitters	346125	4	10 00

Order by Style Number

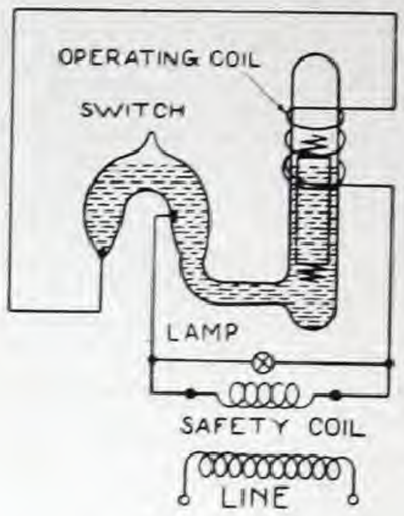
7-304

MERCURY CONTACT FLASHERS

CASE CLOSED



FOR MULTIPLE OPERATION



FOR SERIES OPERATION

CASE OPENED

The most effective lighting devices for warning and controlling motor traffic are of the intermittent flashing type. Various control mechanisms for producing the flashing effect are employed, but the simplest, most positive and most durable of these is the mercury contact flasher.

The mercury flasher consists essentially of a vacuum tube of special shape enclosing a steel plunger and a quantity of mercury.

The tube is made up of a vertical section which contains the plunger and an inverted U section connected by a short horizontal section. Contacts are placed on either side of the U section in such positions that when the tube is filled with mercury an electrical circuit is established between them. Mercury is free to flow through the horizontal section. The plunger is operated by a solenoid to change the level of the mercury which opens and closes the circuit between the two contacts.

Operation—When installed and connected in an electrical circuit the operation is as follows:

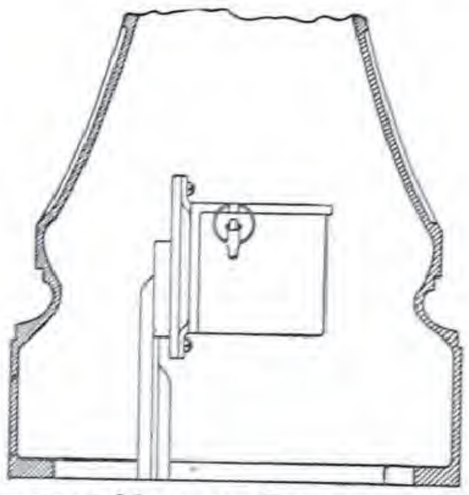
Current flows through the operating coil and lamp. The current through the operating coil or solenoid will lift the plunger, causing a difference in level of mercury between the two sections of the tube. The mercury rises in the vertical section and falls in the U section breaking the connection between the two contacts. This breaks the circuit through the lamp and operating coil and allows the plunger to fall. The plunger floating on the mercury in the vertical section causes the mercury to rise in the U section and contact is reestablished, completing the cycle.

The flasher may be mounted either in the base or in the casing of ornamental standards or mounted on wood poles and used with overhead fixtures.

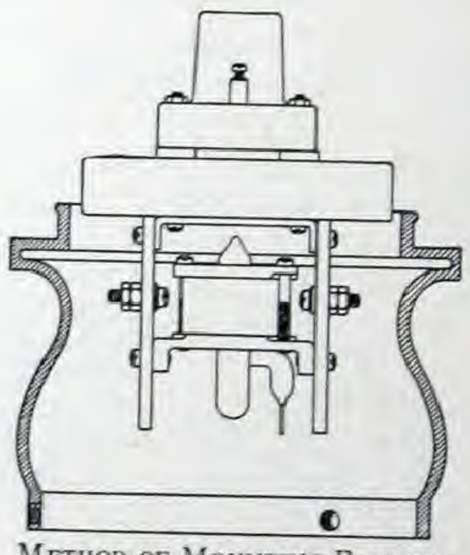
The multiple type is designed for 110 volts a-c. and the series type for 6.6 amperes a-c. Either can be used to control any size standard lamps.

By rearranging the connections the flasher can be used as a relay for the control of street lighting circuits. The contacts are capable of breaking 30 amperes continually. Tubes on life tests have broken a 5-ampere circuit over 18,000,000 times.

Shipping—To facilitate shipment tubes are not assembled in the units but are carefully packed in separate containers.



METHOD OF MOUNTING FLASHER IN BASE OF CAST-IRON STANDARD



METHOD OF MOUNTING FLASHER IN CASING

LIST PRICES

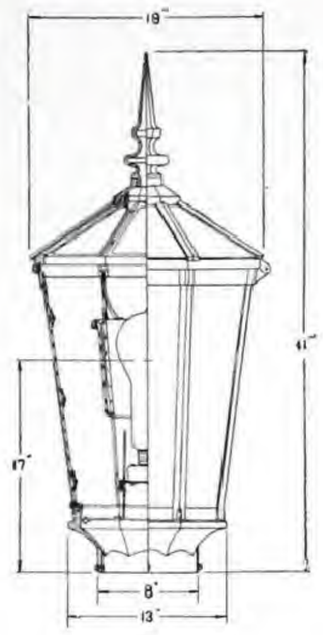
Description	Style No.	Ship. Wt. Lb. Ea.	List Price
For Multiple Operation			
Mounted in cast-iron case, without tube	352395	15	$35 00
Mounted on disc insulator, without tube	352396	15	35 00
Mercury tube for either of above	352397	2	10 00
For Series Operation			
Mounted in cast iron case, with safety coil, but without tube	352478	45	60 00
Mounted on disc insulator, with safety coil, but without tube	352479	45	60 00
Mercury tube for either of the above	352552	2	10 00

Order by Style Number

OCTAGONAL LIGHTING UNITS

SENIOR SIZE

OCTAGONAL SENIOR



OCTAGONAL SENIOR WITH SPURS

Experience has shown that the Octagonal lighting unit is not only attractive in appearance but adaptable to the lighting of many types of street. In addition to this its easily replaceable panels keeps down the cost of glassware replacements and its dust-proof construction makes maintenance charges very low.

This type of unit is furnished in two sizes, junior and senior. An ornamental appearance is given to both by the use of spurs and finials. The design of the unit permits the use of either metal or glass panels in the canopy as desired. The glass in the canopy panels may be similar to that in the side panels or not, as desired. In downtown districts where lighting of the Super White Way type is desired, the use of glass canopy panels increases the upward light on the building fronts, without appreciably affecting the downward distribution. The Bi-lux refractor may be used with either size of Octagonal unit. When so equipped the Octagonal unit is undoubtedly the most efficient unit available for street lighting purposes. Either size of Octagonal unit may be used on standards or brackets equipped with Type A fitters.

LIST PRICES

OCTAGONAL SENIOR LIGHTING UNIT

Designed for Use with 300 to 1000-Watt Multiple Lamp and 4000, 6000 or 10,000-Lumen Series Type C Lamp*

Style No.	Description	Ship. Wt. Lbs., Ea.	List Price
	WITH GLASS CANOPY		
	With Bi-lux Refractor		
351642	With Standard film socket	110	$102 00
351641	With mogul multiple socket	110	101 00
	Without Bi-lux Refractor		
351310	With Standard film socket	100	82 00
351311	With mogul multiple socket	100	81 00
	WITH GLASS CANOPY AND SPURS		
	With Bi-lux Refractor		
351706	With Standard film socket	110	107 00
351707	With mogul multiple socket	110	106 00
	Without Bi-lux Refractor		
351709	With Standard film socket	100	87 00
351710	With mogul multiple socket	100	86 00
	WITH METAL CANOPY		
	With Bi-lux Refractor		
351742	With Standard film socket	110	102 00
351744	With mogul multiple socket	110	101 00
	Without Bi-lux Refractor		
351745	With Standard film socket	100	82 00
351747	With mogul multiple socket	100	81 00
	WITH METAL CANOPY AND SPURS		
	With Bi-lux Refractor		
351748	With Standard film socket	110	107 00
351750	With mogul multiple socket	110	106 00
	Without Bi-lux Refractor		
351751	With Standard film socket	100	87 00
351753	With mogul multiple socket	100	86 00

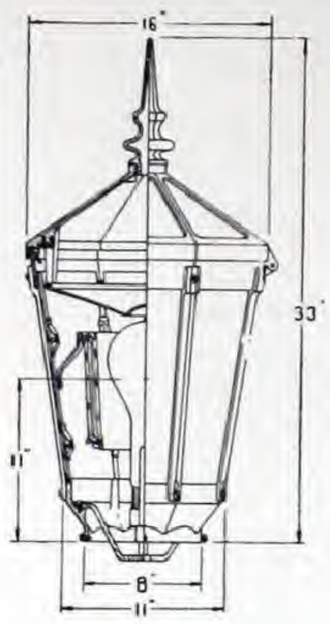
*Prices do not include lamp.
Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

OCTAGONAL LIGHTING UNITS—Continued

JUNIOR SIZE

OCTAGONAL JUNIOR



OCTAGONAL JUNIOR WITH SPURS

Used on standards, brackets and globe holders equipped with Type A fitters.

LIST PRICES

OCTAGONAL JUNIOR LIGHTING UNITS

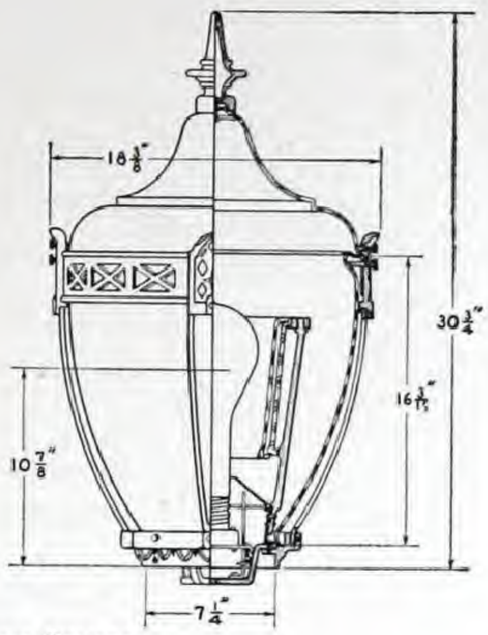
Designed for Use with 500-Watt or Smaller Multiple Lamp and 10,000-Lumen or Smaller Series Type C Lamp*

Style No.	Description	Ship. Wt. Lb. Ea.	List Price
	WITH GLASS CANOPY		
	With Bi-lux Refractor		
351711	With Standard film socket	90	$63 00
351713	With mogul multiple socket	90	62 00
	Without Bi-lux Refractor		
351719	With Standard film socket	80	43 00
351721	With mogul multiple socket	80	42 00
	WITH GLASS CANOPY AND SPURS		
	With Bi-lux Refractor		
351715	With Standard film socket	90	69 00
351717	With mogul multiple socket	90	68 00
	Without Bi-lux Refractor		
351723	With Standard film socket	80	49 00
351725	With mogul multiple socket	80	48 00
	WITH METAL CANOPY		
	With Bi-lux Refractor		
351646	With Standard film socket	90	61 00
351647	With mogul multiple socket	90	60 00
	Without Bi-lux Refractor		
351321	With Standard film socket	80	41 00
351323	With mogul multiple socket	80	40 00
	WITH METAL CANOPY AND SPURS		
	With Bi-lux Refractor		
351728	With Standard film socket	90	67 00
351730	With mogul multiple socket	90	66 00
	Without Bi-lux Refractor		
351732	With Standard film socket	80	47 00
351734	With mogul multiple socket	80	46 00

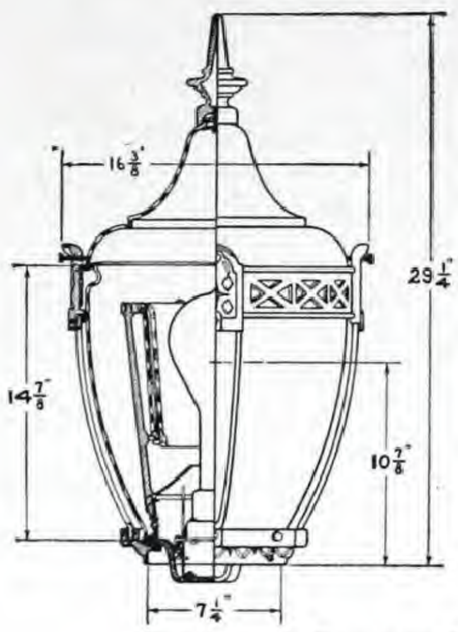
*Prices do not include lamp.
Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

PARAGON LIGHTING UNITS



PARAGON SENIOR



PARAGON JUNIOR

The Paragon Lighting Unit is the latest development in all-glass street lighting units. The glassware consists of two parts, globe and canopy; each is made of clear rectilinear glass, light or dense alabaster rectilinear glass, or Monax glass.

The aluminum ornamental band and side supports add greatly to the attractiveness of the unit. When equipped with the Bi-lux Refractor, the Paragon is a remarkably efficient and attractive unit for street lighting purposes.

The Paragon Senior is recommended for use on standards having a light center of 12-ft. or greater, and the Junior size is suitable for shorter standards. All Paragon units require Type A globe-holder fitters.

An adjustable socket-support permits accurate focusing of the lamp.

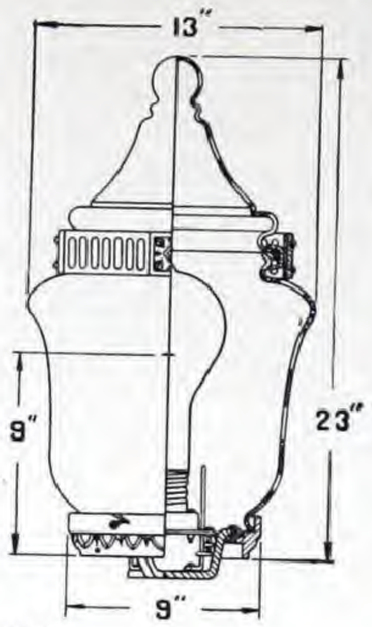
LIST PRICES

Description	Style No.	Ship. Wt. Lb. Ea.	List Price
PARAGON SENIOR LIGHTING UNIT GLASS CANOPY			
Designed for Use with 300 to 1000-Watt Multiple Lamp and 4000, 6000 or 10,000-Lumen Series Type C Lamp*			
Complete with light alabaster globe and canopy, Standard film socket and Bi-lux refractor	352413	52	$64 00
Complete with dense alabaster globe and canopy, Standard film socket but without refractor	352414	37	44 00
Complete with light alabaster globe and canopy, mogul multiple socket and Bi-lux refractor	352415	52	63 00
Complete with dense alabaster globe and canopy, mogul multiple socket but without refractor	352416	37	43 00
Complete with Monax globe and canopy and Standard film socket	352417	37	44 00
Complete with Monax globe and canopy and mogul multiple socket	352418	37	43 00
PARAGON SENIOR LIGHTING UNIT METAL CANOPY			
Designed for Use with 300 to 1000-Watt Multiple Lamp and 4000, 6000 or 10,000-Lumen Series Type C Lamp*			
Complete with light alabaster globe, metal canopy, Standard film socket and Bi-lux refractor	352419	50	62 00
Complete with dense alabaster globe, metal canopy, Standard film socket but without refractor	352420	35	42 00
Complete with light alabaster globe, metal canopy, mogul multiple socket and Bi-lux refractor	352421	50	61 00
Complete with dense alabaster globe, metal canopy, mogul multiple socket but without refractor	352422	35	41 00
Complete with Monax globe, metal canopy and Standard film socket	352423	35	42 00
Complete with Monax globe, metal canopy and mogul multiple socket	352424	35	41 00
PARAGON JUNIOR LIGHTING UNIT GLASS CANOPY			
Designed for Use with 500-Watt or Smaller Multiple Lamp and 10,000-Lumen or Smaller Series Type C Lamp*			
Complete with dense alabaster globe and canopy and Standard film socket	352425	32	39 00
Complete with dense alabaster globe and canopy and mogul multiple socket	352426	32	38 00
Complete with Monax globe and canopy and Standard film socket	352427	32	39 00
Complete with Monax globe and canopy and mogul multiple socket	352428	32	38 00
PARAGON JUNIOR LIGHTING UNIT METAL CANOPY			
Designed for Use with 500-Watt or Smaller Multiple Lamp and 10,000-Lumen or Smaller Series Type C Lamp*			
Complete with dense alabaster globe, metal canopy and Standard film socket	352429	30	37 00
Complete with dense alabaster globe, metal canopy and mogul multiple socket	352430	30	36 00
Complete with Monax globe and canopy and Standard film socket	352431	30	37 00
Complete with Monax globe and canopy and mogul multiple socket	352432	30	36 00

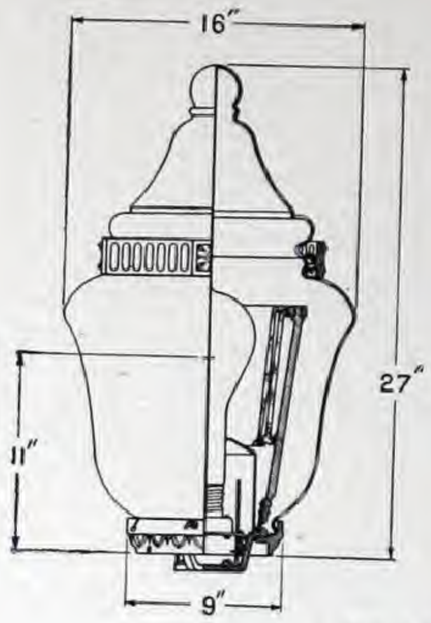
*Prices do not include lamp.
Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

SOL-LUX LIGHTING UNITS



SOL-LUX JUNIOR



SOL-LUX SENIOR

Sol-Lux Lighting Units are made in two sizes—Senior and Junior—so that a harmonious combination may be obtained. The Senior size is suited to large columns where the height to light center is 12 feet or more. The Junior size may be used with any of the smaller columns where the height to light center is less than 12 feet. All Sol-Lux Lighting Units are used with Type A globe holder fitters, and include globes, filigree holding bands, canopies, disc insulators, sockets, socket holders and globe rings. Plain holding bands will be furnished when ordered.

Lighting Units do not include casings. When ordering casings, refer to Pages 864 and 865.

LIST PRICES

Description	Style No.	Ship. Wt. Lb. Ea.	List Price
SOL-LUX SENIOR LIGHTING UNIT GLASS CANOPY			
Designed for Use with 300 to 1000-Watt Multiple Lamps and 4000, 6000 or 10,000-Lumen Series Type C Lamps*			
Complete with light alabaster globe and canopy, Standard film socket and Bi-lux refractor	352308	52	$45 00
Complete with dense alabaster globe and canopy, Standard film socket but without refractor	352309	37	25 00
Complete with light alabaster globe and canopy, mogul multiple socket and Bi-lux refractor	352310	52	44 00
Complete with dense alabaster globe and canopy, mogul multiple socket but without refractor	352311	37	24 00
Complete with Monax globe and canopy and Standard film socket	351277	37	25 00
Complete with Monax globe and canopy and mogul multiple socket	351278	37	24 00
SOL-LUX SENIOR LIGHTING UNIT METAL CANOPY			
Designed for Use with 300 to 1000-Watt Multiple Lamps and 4000, 6000 or 10,000-Lumen Series Type C Lamps*			
Complete with light alabaster globe, metal canopy, Standard film socket and Bi-lux refractor	352312	50	43 00
Complete with dense alabaster globe, metal canopy, Standard film socket but without refractor	352313	35	23 00
Complete with light alabaster globe, metal canopy, mogul multiple socket and Bi-lux refractor	352314	50	42 00
Complete with dense alabaster globe, metal canopy, mogul multiple socket but without refractor	352315	35	22 00
Complete with Monax globe, metal canopy and Standard film socket	351275	35	23 00
Complete with Monax globe, metal canopy and mogul multiple socket	351271	35	22 00
SOL-LUX JUNIOR LIGHTING UNIT GLASS CANOPY			
Designed for Use with 500-Watt or Smaller Multiple Lamps and 4000-Lumen or Smaller Series Type C Lamps*			
Complete with dense alabaster globe and canopy and Standard film socket	352316	32	19 00
Complete with dense alabaster globe and canopy and mogul multiple socket	352317	32	18 00
Complete with Monax globe and canopy and Standard film socket	351290	32	19 00
Complete with Monax globe and canopy and mogul multiple socket	351292	32	18 00
SOL-LUX JUNIOR LIGHTING UNIT METAL CANOPY			
Designed for Use with 500-Watt or Smaller Multiple Lamps and 4000-Lumen or Smaller Series Type C Lamps*			
Complete with dense alabaster globe, metal canopy and Standard film socket	352318	30	17 00
Complete with dense alabaster globe, metal canopy and mogul multiple socket	352319	30	16 00
Complete with Monax globe and canopy and Standard film socket	351283	30	17 00
Complete with Monax globe and canopy and mogul multiple socket	351285	30	16 00

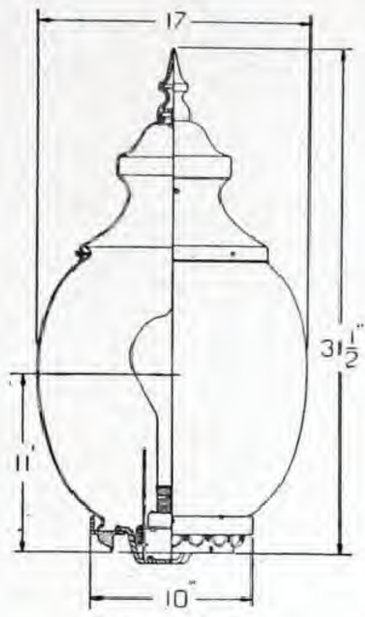
*Prices do not include lamp.

Dimensions are for reference only. For official dimensions apply to the nearest district office.

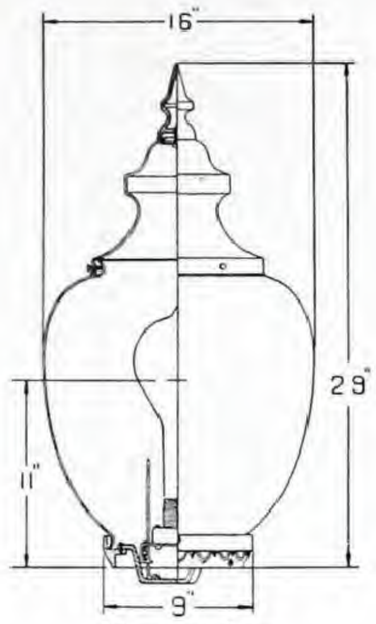
Order by Style Number

WASHINGTON LIGHTING UNITS

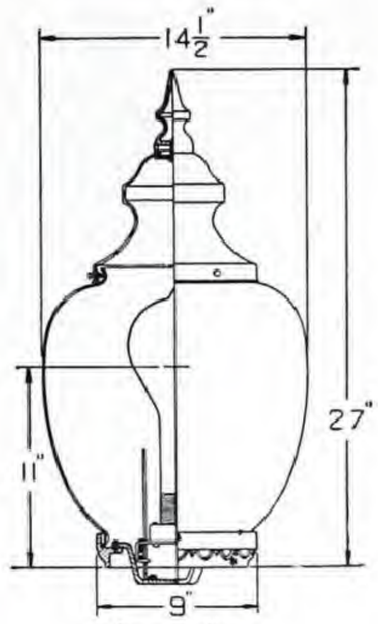
LARGE SIZE



LARGE SIZE



MEDIUM SIZE



SMALL SIZE

Washington Lighting Units can be used on either cast-iron or concrete standards or ornamental brackets when equipped with Type A fitters.

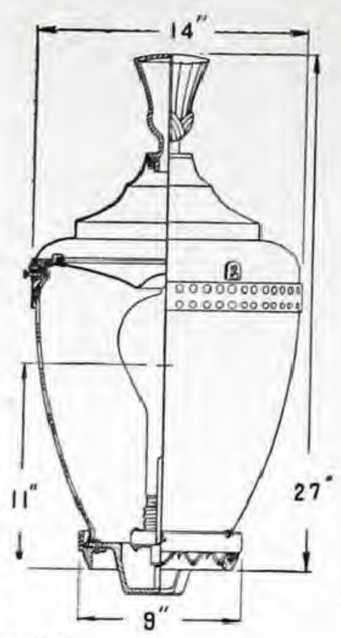
LIST PRICES

Description	Style No.	Ship. Wt. Lb. Ea.	List Price
LARGE SIZE			
Designed for Use with 1000 or 1500-Lumen Lamp*			
Complete with mogul multiple socket	352395	37	$33 00
Complete with Standard film socket	352396	37	34 00
MEDIUM SIZE			
Designed for use with 4000 or 6000-Lumen Lamp*			
Complete with mogul multiple socket	352397	36	26 00
Complete with Standard film socket	352398	36	27 00
SMALL SIZE			
Designed for Use with 2500 or 4000-Lumen Lamp*			
Complete with mogul multiple socket	352399	35	25 00
Complete with Standard film socket	352400	35	26 00
GLASSWARE FOR WASHINGTON LIGHTING UNITS			
Large canopy only	354121	12	7 30
Large globe, (9⅜-inch fitter)	354122	20	17 00
Medium canopy only	354119	12	5 50
Medium globe, (8-inch fitter)	354120	20	12 00
Small canopy only	354117	12	5 20
Small globe, (8-inch fitter)	354118	20	11 60

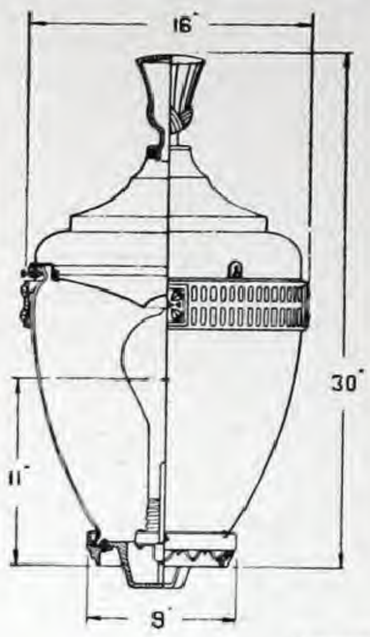
*Prices do not include casings or lamps.
Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

EGYPTIAN LIGHTING UNITS



EGYPTIAN JUNIOR



EGYPTIAN SENIOR

Used with type A globe holder or post top fitter.

LIST PRICES

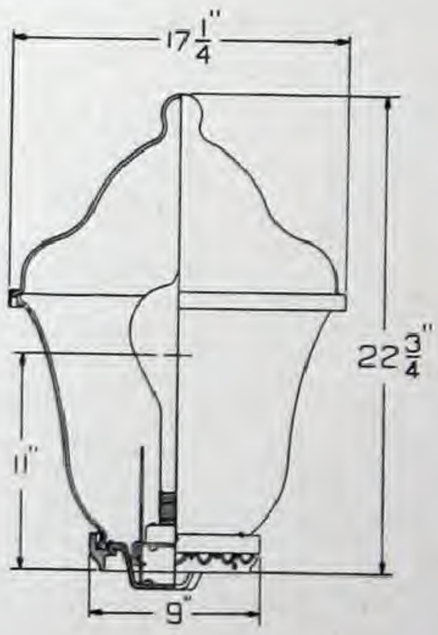
Description	Style No.	Ship. Wt. Lb. Ea.	List Price
EGYPTIAN SENIOR LIGHTING UNIT			
Designed for Use with 300 to 1000-Watt Multiple Lamp and 4000, 6000 and 10000-Lumen Series Type C Lamp*			
Complete with light alabaster globe, Standard film socket and Bi-lux refractor	352433	50	$54 00
Complete with dense alabaster globe, Standard film socket but without refractor	352434	35	34 00
Complete with light alabaster globe, mogul multiple socket and Bi-lux refractor	352435	50	53 00
Complete with dense alabaster globe, mogul multiple socket but without refractor	352436	35	33 00
Complete with Monax globe and Standard film socket	352437	35	34 00
Complete with Monax globe and mogul multiple socket	352438	35	33 00
EGYPTIAN JUNIOR LIGHTING UNIT			
Designed for Use with 500-Watt or Smaller Multiple Lamp or 4000-Lumen or Smaller Series Lamp*			
Complete with dense alabaster globe and Standard film socket	352439	30	28 00
Complete with dense alabaster globe and Mogul multiple socket	352440	30	27 00
Complete with Monax globe and Standard film socket	352441	30	28 00
Complete with Monax globe and Mogul multiple socket	352442	30	27 00

*Prices do not include lamp.

CINCINNATI LIGHTING UNITS

The Cincinnati Lighting Unit consists of a specially designed globe and canopy, both of Monax diffusing glass, which is assembled so as to form one unit by means of an ornamental metal band. The shape of the canopy is such that it forms a watershed allowing rain to drip from it instead of running down the globe as in other types. The method of assembling the globe and canopy with an ornamental band eliminates the disagreeable shadows which are cast on the globe when internal methods of attaching are used. The Cincinnati Unit may be attached to the casing by means of a Jiffy Globeholder, which facilitates the removal of the unit for relamping and cleaning.

Prices do not include casing.



LIST PRICES

	Style No.	Ship. Wt., Lb., Ea.	List Price
For casings with 8-inch fitter complete with mogul multiple socket	352409	25	$27 00
For casings with 8-inch fitter complete with Standard film socket	352410	25	28 00
For casings with 9⅜-inch fitter complete with mogul multiple socket	352411	25	27 00
For casings with 9⅜-inch fitter complete with Standard film socket	352412	25	28 00

Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

LIGHTING UNIT PARTS

For prices and descriptions of glassware see pages 904 to 911.

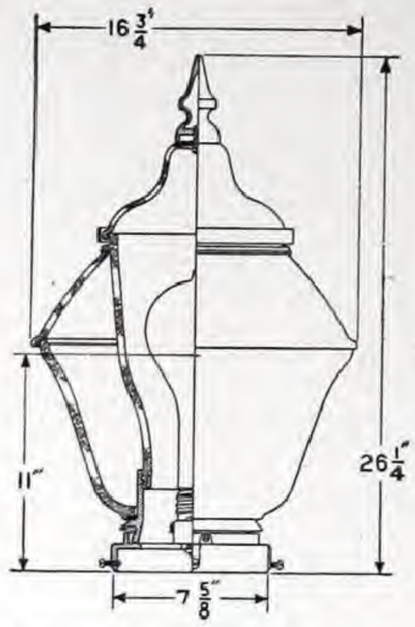
LIST PRICES

Description	Style No.	Ship. Wt. Lb. Ea.	List Price
HOLDING BANDS			
Plain holding band for Sol-Lux Senior unit	336523	2	$ 1 00
Filigree holding band for Sol-Lux Senior unit	354083	2	2 00
Plain holding band for Sol-Lux Junior unit	336522	2	1 00
Filigree holding band for Sol-Lux Junior unit	353999	2	2 00
Egyptian Senior band	352884	2	5 25
Paragon Senior metal parts, complete	351697	10	21 00
Paragon Junior metal parts, complete	351698	8	19 50
Plain holding band for Cincinnati unit	351582	2	2 00
Holding ring for Small Washington unit	354152	2	2 00
Holding ring for Medium Washington unit	354153	2	2 00
Holding ring for Large Washington unit	354154	2	2 00
REFLECTORS			
Upper reflector for Octagonal Senior unit	354071	6	4 50
Upper reflector for Octagonal Junior unit	354054	6	3 40
Upper reflector for Egyptian Senior unit	354054	6	3 40
Upper reflector for Egyptian Junior unit	354085	4	2 65
Lower reflector for Paragon or Sol-Lux units	354078	2	3 50
REFRACTOR HOLDERS			
Refractor holder for Paragon, Sol-Lux Senior or Egyptian Senior unit	351696	2	4 00
Refractor holder for Octagonal Senior unit	353900	2	3 00
Refractor holder for Octagonal Junior unit	354035	2	3 00
METAL CANOPIES			
Sol-Lux Senior metal canopy, porcel in enameled	336151	10	5 95
Sol-Lux Senior metal canopy, aluminum	354102	6	5 95
Sol-Lux Junior metal canopy, porcel in enameled	336149	8	5 35
Sol-Lux Junior metal canopy, aluminum	354173	5	5 35
Egyptian Senior metal canopy	353204	10	11 80
Egyptian Junior metal canopy	353260	10	10 60
FINIALS			
Spike Ornament for Octagonal Junior unit	354108	3	2 50
Spear Ornament for Octagonal Junior unit	352802	3	2 50
Acorn Ornament for Octagonal Junior unit	350091	3	2 50
Spike Ornament for Octagonal Senior unit	354044	3	3 00
Finial for Paragon unit	351531	3	2 50
Finial for Washington unit	354164	3	2 00
SOCKETS			
Mogul skeleton socket	336179	1	95
Compensator socket	336040	3	1 95
1000-lumen reactance unit	335970	7	12 95
2500-lumen reactance unit	335971	10	13 95
4000-lumen auto-transformer unit	335627	11	10 95
6000-lumen auto-transformer unit	335628	12	12 45
10000-lumen auto-transformer unit	335629	16	15 95
Disc receptacle for Standard film socket	345896	4	1 95
MISCELLANEOUS PARTS			
Block insulator	336110	1	35
Disc insulator	336187	3	1 00
Globe protecting ring	353800	1	20
Gauge for refractor holders	351485	1	1 00
Sol-Lux globe ring only	354140	5	2 00
Sol-Lux globe ring with adjustable socket support	354067	7	4 00

Order by Style Number

HOLOPHANE ORNAMENTAL REFRACTORS

HOLOPHANE ORNAMENTAL REFRACTOR



REFRACTOR AND HOLDER-RING

REFRACTOR DISSEMBLED

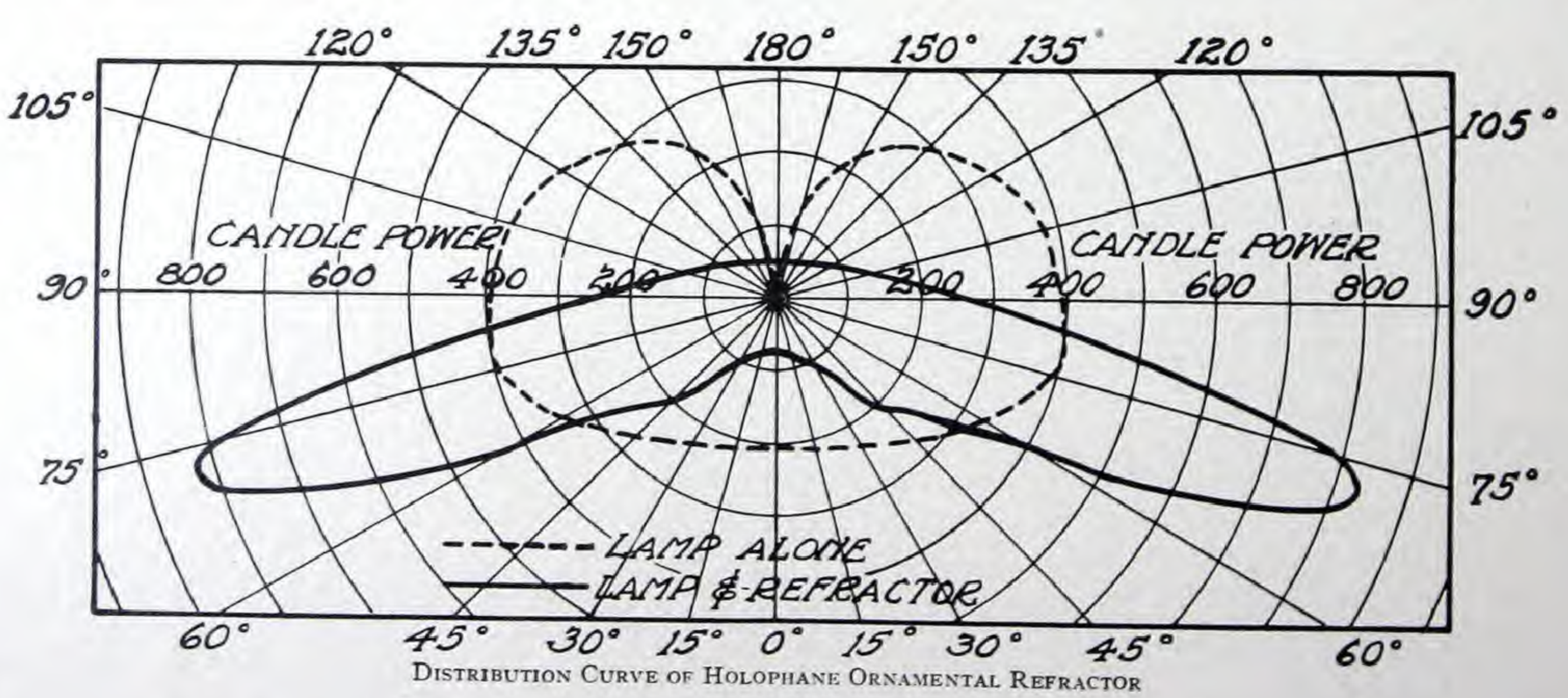
The Holophane ornamental refractor redirects practically all of the upward light and is therefore well adapted for use on boulevards, parkways and in residential districts where upward light is a total loss and often annoying to residents along the street. The refractor is made in three pieces. The inner piece has refracting prisms on its outer surface and the upper outer piece has similar prisms on its inner surface. These deflect the light in the proper downward direction. The outer bottom piece has diffusing prisms on its inner surface. The assembled unit is locked together by a metal nut at the bottom engaging with glass threads on the inner element and bearing against a flange on the outside lower piece. All exposed surfaces are smooth, which reduces dirt accumulation to a minimum and makes cleaning easy. The double set of Holophane refracting prisms effectively conserves the light by deflecting it into useful directions and the diffusing prisms give the bowl a beautiful luminous appearance.

This Holophane ornamental refractor is especially adapted to the modern practice of high mounting. By raising or lowering the lamp the angle of maximum candlepower can be varied between 65 to 80 degrees to conform to all practical ratios between spacing and mounting heights.

The ornamental refractor with holder ring can be used on any casing with Type A Fitter.

LIST PRICES

Description	Style No.	Ship. Wt. Lb. Ea.	List Price
Refractor lighting unit with holder ring, ornamental glass canopy, porcelain disc insulator and Standard film socket for 2500, 4000 and 6000 lumen 6.6-amp. series lamps	352401	105	$70 00
Same, except with mogul socket for 300 and 500-watt multiple lamps	352402	104	69 00

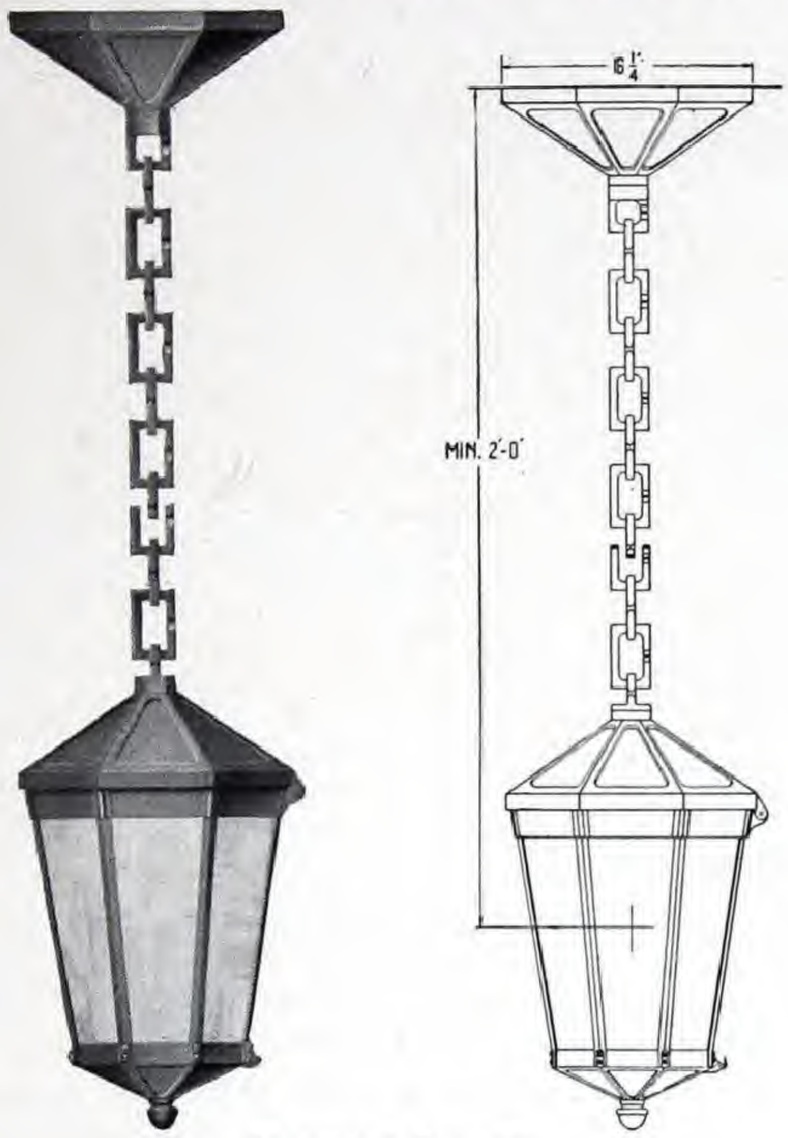


DISTRIBUTION CURVE OF HOLOPHANE ORNAMENTAL REFRACTOR

Order by Style Number

7-362B

PARAGON AND OCTAGONAL PENDANTS



OCTAGONAL PENDANT

PARAGON PENDANT

For lighting porticos, porte-cochères or similar structures, ornamental pendants suspended by a chain is often most desirable. In buildings of this character, as well as public markets, railway concourses and similar semi-public places, lighting standards would be in the way; under these conditions pendant units are recommended.

The Paragon Pendant

Description—The Paragon Pendant consists of an ornamental cast-iron canopy with a 1¼-inch female pipe thread at the top and is designed for either bracket or chain suspension. It is provided with an adjustable socket support and is suitable for use with multiple lamps or with street series lamps operated from a safety coil. The globe band is similar in construction to that used on Luxsolite pendants, and firmly seats the globe on a felt gasket thus making the unit dust- and bug-proof. A parabolic reflector which increases the illumination in the useful plane is included with the unit.

Application—If desired the Paragon Pendant may be supplied with an aluminum canopy and cable clamp for center suspension in small towns and villages where the cost of an underground system would be prohibitive. This arrangement provides an economical method of installing an ornamental street lighting system with overhead construction. The Paragon Pendant is supplied with clear or flashed opalescent rectilinear or Monax glass globes.

The Octagonal Pendant

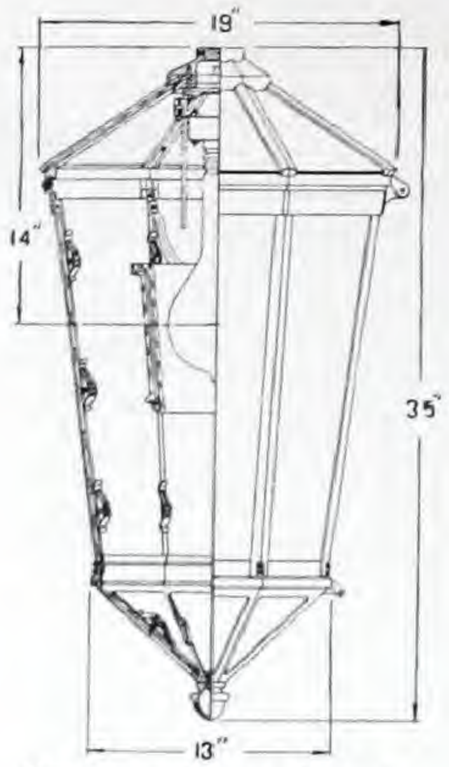
Description—The Octagonal Pendant is furnished in two sizes, Senior and Junior. It consists of a cast-iron canopy with 1¼-inch female pipe thread at the top and is designed for either bracket or chain suspension. It is provided with an adjustable socket support and is suitable for use with multiple lamps or with street series lamps, when operated from a safety coil. The ribs are of cast-iron and are provided with felt gaskets on which the glass panels are seated, thus making the unit dust- and bug-proof. The bottom fitter is of cast aluminum and is hinged to facilitate cleaning and re-lamping. The standard glassware used for the panels is Syenite glass but other commercial glass panels such as cathedral, ribbed, Florentine and Factrolite will be supplied if desired. Specially designed spring clips hold the panels firmly in place and provide a simple method of replacing them if broken.

Either of the above units may be equipped with Bi-lux refractors if desired.

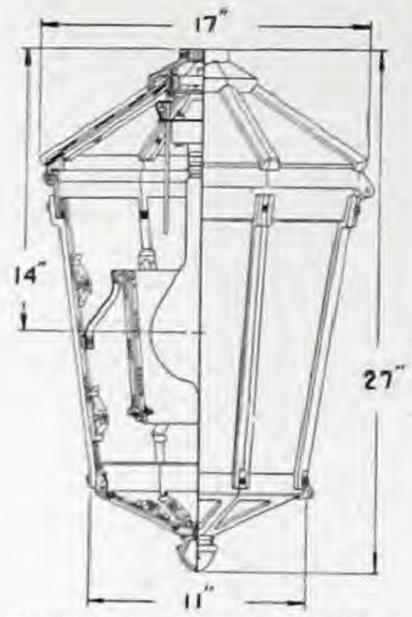
Canopies and Chains

When it is desired to suspend these units from the ceiling a suitable chain assembly consisting of ceiling plate, stem, two loops and thirty inches of chain, is provided. The chain is of cast iron and consists of quickly detachable links so that the unit may be easily adjusted to a suitable height.

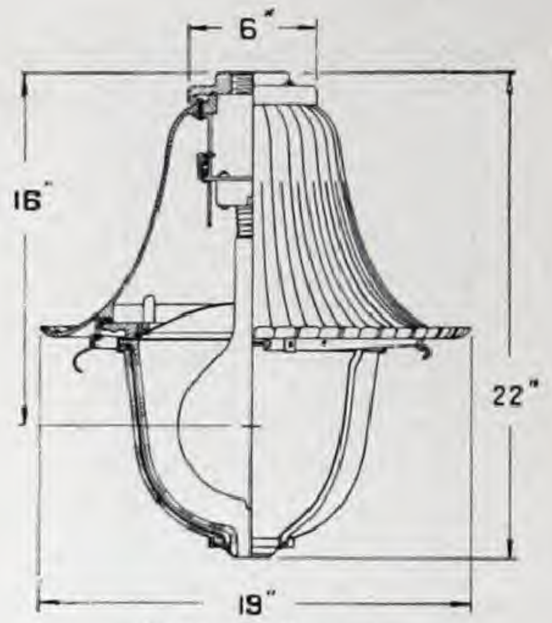
PARAGON AND OCTAGONAL PENDANTS—Continued



OCTAGONAL SENIOR PENDANT



OCTAGONAL JUNIOR PENDANT



PARAGON PENDANT

Style numbers and list prices of pendants do not include ceiling canopy or suspension chain. These items should be ordered separately.

LIST PRICES

Description	Ship. Wt. Lb., Each	Style No.	List Price
PARAGON PENDANTS			
Designed for use with 500-watt or smaller multiple lamps and 4000-lumen or smaller Type C series lamps*			
Paragon Pendant, clear rectilinear globe and medium multiple socket	150	351688	$76 15
Paragon Pendant, clear rectilinear globe and mogul multiple socket	150	351687	76 25
Paragon Pendant, clear rectilinear globe standard film socket	150	351689	77 25
Paragon Pendant, flashed opalescent rectilinear globe and medium multiple socket	150	351691	77 30
Paragon Pendant, flashed opalescent rectilinear globe and mogul multiple socket	150	351690	77 40
Paragon Pendant, flashed opalescent rectilinear globe standard film socket	150	351692	78 40
Paragon Pendant, Monax globe and medium multiple socket	150	351694	77 30
Paragon Pendant, Monax globe and mogul multiple socket	150	351693	77 40
Paragon Pendant, Monax globe standard film socket	150	351695	78 40
OCTAGONAL JUNIOR PENDANTS			
Designed for use with 500-watt or smaller multiple lamps and 4000-lumen or smaller Type C series lamps*			
Octagonal Jr. Pendant, with standard film socket	80	351331	45 00
Octagonal Jr. Pendant, with medium socket for 200-watt multiple lamps	80	351332	43 90
Octagonal Jr. Pendant, with mogul socket for 300 and 500-watt multiple lamps	80	351333	44 00
Octagonal Jr. Pendant, with mogul socket for 750 and 1000-watt multiple lamps and 15 or 20-ampere series lamps	80	351334	44 00
OCTAGONAL SENIOR PENDANTS			
Designed for use with 300 to 1000-watt multiple lamps and 4000, 6000 or 10,000-lumen series Type C lamps*			
Octagonal Sr. Pendant, with standard film socket	145	351317	82 00
Octagonal Sr. Pendant, with mogul socket for 300 and 500-watt multiple lamps	145	351318	81 00
Octagonal Sr. Pendant, with mogul socket for 750 and 1000-watt multiple lamps and 15 or 20-ampere series lamps†	145	351319	81 00
CANOPIES AND CHAINS			
For Paragon Pendants			
Complete assembly consisting of ceiling plate, stem, canopy, loops and 30 inches of chain	40	351590	38 50
Extra chain, per link	2	351593	2 00
For Octagonal Junior and Senior Pendants			
Complete assembly consisting of ceiling plate, stem, canopy, loops and 30 inches of chain	45	351589	38 50
Extra chain, per link	2	351594	2 00

*Prices do not include lamps.

†When used with safety coils or other external transformers.

Dimensions are for reference only. For official dimensions apply to the nearest district office.

Order by Style Number

HAZARD UNDERGROUND CABLE

Modern practice in the installation of ornamental street lighting systems favors the use of steel-armored cable buried in a shallow trench for the carrying of current to the lighting units.

The steel-armored cable consists of a copper conductor insulated with rubber, over which is a braided cover. Next there is a layer of tape, which is enclosed in a continuous lead sheath. A wrapping of steel tape, so arranged as to insure ample overlapping when the cable is bent, prevents injury to the lead sheath. An outer serving of jute affords protection to the steel tape when placed in the ground. If properly installed, the life of this cable is almost indefinite, as the lead cover forms an efficient protection from water, while the steel armor protects the cable from mechanical injury. Where mechanical protection is not essential, lead covered cable, not encased in steel may be used.

LEAD ENCASED, STEEL TAPED CABLE

Size B&S Gauge	Rubber Wall Inches	Lead Wall Inches	Thickness Steel Tape Inches	Working Voltage	Standard Lengths Feet	Approximate Outside Dia. Inches	Dia. Reel Inches	Shipping Wt., Lb. per 1000 Feet	List Price per 1000 Feet
SINGLE-CONDUCTOR CABLE									
10	3/64	3/64	.020	600	2000	.61	38	636	
10	3/64	3/64	.030	600	2000	.65	38	768	
10	3/32	1/16	.020	2500	2000	.74	44	974	
10	3/32	1/16	.030	2500	2000	.78	44	1136	
10	1/8	1/16	.020	3500	2000	.80	46	1122	
10	1/8	1/16	.030	3500	2000	.84	46	1295	
10	5/32	1/16	.020	5000	1500	.86	44	1225	
10	5/32	1/16	.030	5000	1500	.90	44	1420	
10	6/32	1/16	.020	6000	1500	.93	48	1435	
10	6/32	1/16	.030	6000	1500	.97	48	1639	
8	3/64	3/64	.020	600	2500	.64	42	710	
8	3/64	3/64	.030	600	2500	.68	42	847	
8	3/32	1/16	.020	2500	2500	.77	46	1060	
8	3/32	1/16	.030	2500	2500	.81	46	1230	
8	1/8	1/16	.020	3500	2000	.83	46	1200	
8	1/8	1/16	.030	3500	2000	.87	46	1390	
8	5/32	1/16	.020	5000	1500	.89	46	1277	
8	5/32	1/16	.030	5000	1500	.93	46	1477	
8	6/32	1/16	.020	6000	1500	.95	48	1529	
8	6/32	1/16	.030	6000	1500	.99	48	1737	
6	1/16	1/16	.020	600	2500	.74	46	1020	
6	1/16	1/16	.030	600	2500	.78	46	1175	
6	3/32	1/16	.020	2500	2000	.80	46	1200	
6	3/32	1/16	.030	2500	2000	.84	46	1375	
6	1/8	1/16	.020	3500	2000	.86	48	1320	
6	1/8	1/16	.030	3500	2000	.90	48	1500	
6	5/32	1/16	.020	5000	1500	.92	48	1480	
6	5/32	1/16	.030	5000	1500	.96	48	1680	
6	6/32	1/16	.020	6000	1500	.99	48	1642	
6	6/32	1/16	.030	6000	1500	1.03	48	1860	
TWO-CONDUCTOR CABLE									
10	3/64	3/64	.020	600	2000	.83	46	1007	
10	3/64	3/64	.030	600	2000	.87	46	1192	
10	3/32	1/16	.020	2500	2000	.74x1.07	48	1649	
10	3/32	1/16	.030	2500	2000	.78x1.11	48	1907	
10	1/8	1/16	.030	3500	1500	.84x1.24	48	2184	
10	5/32	1/16	.030	5000	1500	.90x1.36	52	2465	
10	6/32	1/16	.030	6000	1000	.97x1.49	54	2762	
8	3/64	3/64	.020	600	2500	.88	50	1240	
8	3/64	3/64	.030	600	2500	.92	50	1420	
8	3/32	1/16	.020	2500	2000	.77x1.13	50	1780	
8	3/32	1/16	.030	2500	2000	.81x1.17	50	2050	
8	1/8	1/16	.030	3500	1500	.87x1.29	50	2320	
8	5/32	1/16	.030	5000	1500	.93x1.42	52	2628	
8	6/32	5/64	.030	6000	1000	1.02x1.57	54	3317	
6	1/16	1/16	.030	600	2000	.78x1.11	50	2000	
6	3/32	1/16	.030	2500	2000	.84x1.23	52	2280	
6	1/8	1/16	.030	3500	1500	.90x1.36	50	2540	
6	5/32	1/16	.030	5000	1500	.96x1.48	54	2850	
6	6/32	6/64	.030	6000	1000	1.06x1.64	58	3551	

ON REQUEST

ON REQUEST

HAZARD UNDERGROUND CABLE—Continued

LEAD ENCASED, STEEL TAPED CABLE—Continued

Size B&S Gauge	Rubber Wall Inches	Lead Wall Inches	Thickness Steel Tape Inches	Working Voltage	Standard Lengths Feet	Approximate Outside Dia. Inches	Dia. Reel Inches	Shipping Wt., Lb. per 1000 Feet	List Price per 1000 Feet
				THREE-CONDUCTOR CABLE					
10	3/64	3/64	.020	600	2000	.86	48	1200	
10	3/64	3/64	.030	600	2000	.90	48	1390	
10	3/32	1/16	.030	2500	1500	1.14	50	2141	
10	1/8	5/64	.030	3500	1500	1.31	52	2861	
10	5/32	5/64	.030	5000	1000	1.45	56	3336	
10	6/32	5/64	.030	6000	1000	1.59	62	3828	
8	3/64	1/16	.020	600	2000	.95	50	1770	ON REQUEST
8	3/64	1/16	.030	600	2000	.99	50	1985	
8	3/32	5/64	.030	2500	1500	1.23	56	2660	
8	1/8	5/64	.030	3500	1000	1.37	56	3100	
8	5/32	5/64	.030	5000	1000	1.51	60	3600	
8	6/32	3/32	.040	6000	1000	1.73	64	4920	
6	1/16	1/16	.030	600	1500	1.14	54	2260	
6	3/32	5/64	.030	2500	1500	1.31	56	3000	
6	1/8	5/64	.030	3500	1000	1.45	56	3460	
6	5/32	5/64	.030	5000	1000	1.59	60	3950	
6	6/32	3/32	.040	6000	1000	1.80	66	5344	

LEAD ENCASED CABLE

Size B&S Gauge	Rubber Wall Inches	Lead Wall Inches	Working Voltage	Standard Lengths Feet	Approximate Outside Dia. Inches	Dia. Reel Inches	Shipping Wt., Lb., per 1000 Feet	List Price per 1000 Feet
			SINGLE-CONDUCTOR CABLE					
10	3/64	3/64	600	2000	.33	34	312	
10	3/32	1/16	2500	2000	.46	36	561	
10	1/8	1/16	3500	2000	.52	38	666	
10	5/32	1/16	5000	1500	.58	40	775	
10	6/32	1/16	6000	1500	.65	42	890	
8	3/64	3/64	600	2500	.36	36	370	ON REQUEST
8	3/32	1/16	2500	2500	.49	40	620	
8	1/8	1/16	3500	2000	.55	40	735	
8	5/32	1/16	5000	1500	.61	40	810	
8	6/32	1/16	6000	1500	.67	44	961	
6	1/16	1/16	600	2500	.46	40	605	
6	3/32	1/16	2500	2000	.52	40	710	
6	1/8	1/16	3500	2000	.58	42	820	
6	5/32	1/16	5000	1500	.64	42	940	
6	6/32	1/16	6000	1500	.71	44	1034	
			TWO-CONDUCTOR CABLE					
10	3/64	3/64	600	2000	.33x .57	40	588	
10	3/32	1/16	2500	2000	.46x .79	44	954	
10	1/8	1/16	3500	1500	.52x .92	42	1142	
10	5/32	1/16	5000	1500	.58x1.04	44	1327	
10	6/32	1/16	6000	1000	.65x1.17	46	1536	
8	3/64	3/64	600	2500	.36x .63	44	735	ON REQUEST
8	3/32	1/16	2500	2000	.49x .85	44	1070	
8	1/8	1/16	3500	1500	.55x .97	44	1260	
8	5/32	1/16	5000	1500	.61x1.10	46	1450	
8	6/32	5/64	6000	1000	.70x1.25	48	1992	
6	1/16	1/16	600	2000	.46x .79	44	1080	
6	3/32	1/16	2500	2000	.52x .92	46	1220	
6	1/8	1/16	3500	1500	.58x1.04	44	1410	
6	5/32	1/16	5000	1500	.64x1.16	48	1620	
6	6/32	5/64	6000	1000	.74x1.32	48	2180	
			THREE-CONDUCTOR CABLE					
10	3/64	3/64	600	2000	.58	42	698	
10	3/32	1/16	2500	1500	.82	46	1214	
10	1/8	5/64	3500	1500	.99	52	1781	
10	5/32	5/64	5000	1000	1.13	52	2115	
10	6/32	5/64	6000	1000	1.27	54	2477	
8	3/64	1/16	600	2000	.67	46	1210	ON REQUEST
8	3/32	5/64	2500	1500	.91	50	1660	
8	1/8	5/64	3500	1000	1.05	50	1970	
8	5/32	5/64	5000	1000	1.19	54	2320	
8	6/32	3/32	6000	1000	1.37	60	3092	
6	1/16	1/16	600	1500	.82	48	1350	
6	3/32	5/64	2500	1500	.99	50	1920	
6	1/8	5/64	3500	1000	1.13	50	2250	
6	5/32	5/64	5000	1000	1.27	54	2600	
6	6/32	3/32	6000	1000	1.44	60	3427	

HAZARD RUBBER COVERED WIRE

In an ornamental street lighting system the underground cable is usually run as far as the disconnecting pothead or safety coil in the base of the post. From this point No. 6 or No. 8 B&S single-conductor wire is used to carry the current to the lamp socket.

Hazard wire is carefully made in accordance with the best commercial practice. It is carefully inspected and before acceptance must withstand insulation tests far in excess of its normal working pressure.

The No. 8 and No. 6, for 600 volts and 2500 volts working pressure, are shipped in coils. No. 8, 3500-volt wire in less than 300-feet lengths, is furnished in coils, longer lengths on reels. All 5000-volt wire is shipped on reels.

Prices are f.o.b. factory, Wilkes-Barre, Pa.

LIST PRICES

Size B&S Gauge	Rubber Wall Inches	Working Voltage	Approximate Outside Dia. Inches	Shipping Wt., Lb. per 1000 Feet	List Price per 1000 Feet
10	3/64 double braid	600	.30	62	
10	3/32 double braid	2500	.39	112	
10	1/8 double braid	3500	.45	142	
10	5/32 double braid	5000	.53	192	
10	6/32 double braid	6000	.60	238	
8	3/64 double braid	600	.33	90	
8	3/32 double braid	2500	.43	150	
8	1/8 double braid	3500	.50	180	
8	5/32 double braid	5000	.56	230	
8	6/32 double braid	6000	.63	296	
6	1/16 double braid	600	.40	150	
6	3/32 double braid	2500	.47	200	
6	1/8 double braid	3500	.53	240	
6	5/32 double braid	5000	.60	300	
6	6/32 double braid	6000	.66	350	

ON REQUEST

SHERIDAN ROAD, CHICAGO. THE FIRST INSTALLATION OF ORNAMENTAL ASYMMETRIC STREET LIGHTING IN THE WORLD

GLASSWARE FOR STREET LIGHTING UNITS

WESTINGHOUSE-HOLOPHANE BI-LUX REFRACTORS

BI-LUX REFRACTOR, CYLINDRICAL TYPE

BI-LUX REFRACTOR, BOWL TYPE

The flux from any light source naturally radiates in all directions. One of the most important requirements of street lighting is a uniform intensity upon the roadway and sidewalks so that pedestrians and drivers may proceed in safety and comfort.

Prior to the advent of the Bi-lux refractor a uniform illumination on the street surface was only possible if the units were placed at intervals so close as to be impracticable from the standpoint of cost. Even then it was difficult to see beyond the nearest unit. In the days of slow-moving vehicles this condition was not of great moment, but with the necessarily greater speed of modern traffic, the need of good "visibility" at a greater distance on our city streets is becoming of the utmost importance.

To meet this requirement has come the Bi-lux refractor. First introduced to the lighting profession at the 1923 convention of the Illuminating Engineering Society at Lake George, New York, this device has aroused a nation-wide interest and is generally conceded to have marked the greatest advance in the art of ornamental street lighting since the introduction of the type C lamp.

As its name implies the Bi-lux refractor produces a graduated distribution of light flux on the street surface in two main beams by means of refracting prisms. Its chief function is to "build up" two wide paths of light diverging in opposite directions up and down the street. This is accomplished by intercepting that portion of the flux which radiates at wasteful angles and redirecting it in angles where it will be most useful.

The angle of maximum distribution of the two main beams is 22½ degrees from the curb line toward the roadway, and the intensity is so graduated that an evenly distributed light flux is "sprayed" on the street surface.

Description—The Bi-lux refractor is made in two types, cylindrical and bowl, the latter of which may be either open at the bottom or closed, as conditions require. In pendent fixtures which are designed to burn lamps base up, the closed bowl is recommended, while for post top lighting units, where the lamp usually burns base down, either the cylindrical type or the open bowl type may be used. The refractor consists of two glass elements nested one within the other and clamped together so as to form a single dust-tight unit. A series of horizontal prisms on the inner element bend the light flux downward in the direction of the street surface, and a series of vertical prisms on the outer element bend the light rays into the two main beams. The minimum distribution is in the direction of the sidewalk at right angles to the curb line, and a slightly increased intensity is directed across the road in the opposite direction. The resultant illumination is evenly distributed and glare is reduced to a minimum.

Application—The cylindrical type Bi-lux Refractor is designed for mounting in post top units when located close to the curb line. It controls practically all of the light from a type C lamp with the exception of a small portion of the upward illumination. The upward light, which is negligible compared to the total output of the lamp, may be redirected, if desired, by means of a specially designed reflector, or it may be utilized for illuminating the building fronts by equipping the lighting unit with a glass canopy. This is often desirable in downtown streets to bring out the details of the architecture of important buildings. The light from a 4000-lumen type C lamp under these conditions is approximately equivalent to 2000 candle power up and down the street, 400 candle power across the roadway and 250 candle power in the direction of the buildings.

The closed bowl type is designed for pendent units or Multilux streethoods only.

List Prices—For list prices, style numbers and dimensions, see page 908.

GLASSWARE FOR STREET LIGHTING UNITS—Continued

HOLOPHANE 2-WAY AND 4-WAY REFRACTORS

HOLOPHANE FOUR-WAY REFRACTOR

HOLOPHANE TWO-WAY REFRACTOR

Holophane 2-Way and 4-Way refractors are designed for use with overhead street lighting systems. Like the Bi-lux refractor they deflect a large part of the upward light of the lamp in a downward direction and a small part of the downward light upward, to approximate closely, in any vertical plane, the ideal distribution for even illumination of the street. In addition to this they redistribute the light laterally, or sideways, in such a way as to conserve a large part of the light which otherwise would be spilled outside of the street area. This lateral light distribution makes possible 40 to 50 per cent more light on the surface than obtained by the best equipment heretofore available for this purpose.

Description

The 2-Way and 4-Way refractors are of the standard 8½-inch bowl size. To insure proper orientation with respect to the street, three notches are placed in the flange at fixed but unequal spacing. These notches engage lugs in the combination globe and refractor ring so that when the Luxsolite pendant or Multilux streethood is properly set, with respect to the street, the refractor can only fit in the correct position to properly illuminate the street area.

Construction

The well-known Holophane two-piece construction is used, comprising, for each refractor, two pieces of glass which nest together. The outside of the inner piece carries horizontal refracting prisms which turn the greater part of the upward light downward and some of the downward light upward, to produce the correct distribution of light in a vertical plane. The inside of the outer piece carries vertical refracting prisms which redistribute the light laterally or sideways. In the 4-Way refractor, these prisms divide the light into four wide beams. The inside of the inner piece of the refractor is smooth and the outside of the outer piece is smooth. When the two pieces of glass are clamped together by means of a large nut, with suitable gaskets, the complete refractor is smooth inside and outside and all of the prisms are enclosed in a dust-tight chamber. This prevents the collection of dirt on the prisms and facilitates the cleaning of the exposed surfaces.

The 2-Way refractor differs from the 4-Way only in prismatic, not in mechanical, construction. The vertical prisms divide the light laterally into two broad beams instead of four. These beams are directly opposite each other so that when the 2-Way refractor is mounted in the center of the street, the street is lighted evenly in both directions.

Application

These refractors are designed for suspension above the center of the street; the 2-Way between intersections and the 4-Way at intersections. Either cable suspensions or mast-arms may be used. This equipment is particularly suitable for small towns and villages that cannot finance an ornamental system of street lighting and yet, because of a large amount of automobile traffic, require an effective and economical illumination of arterial thoroughfares. In sparsely settled residential districts they allow wider spacing of units and smaller sizes of lamps and still provide a satisfactory illumination, which can be easily augmented as the neighborhood builds up by simply substituting large lamps. On treeless residential streets they materially reduce the annoyance caused by light shining on porches or in windows and still, if properly mounted, give adequate light on the sidewalks.

List Prices—For list prices, style numbers and dimensions, see page 908.

GLASSWARE FOR STREET LIGHTING UNITS—Continued

HOLOPHANE SUPERLUX REFRACTORS

SUPERLUX REFRACTOR

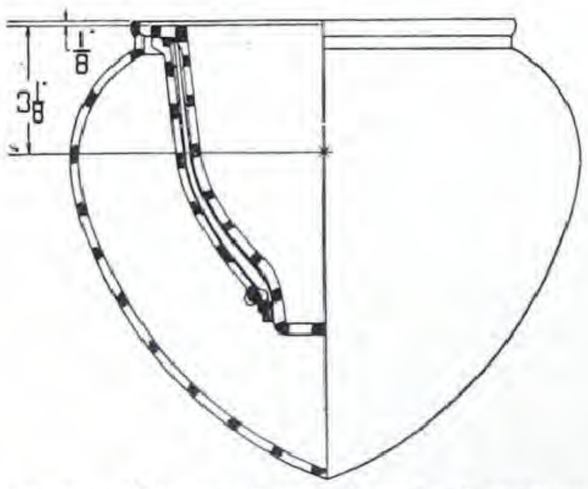
LUXSOLITE PENDANT SHOWING SUPERLUX REFRACTOR WITHIN RECTILINEAR GLOBE

MULTILUX STREETHOOD SHOWING SUPERLUX REFRACTOR WITHIN RECTILINEAR GLOBE

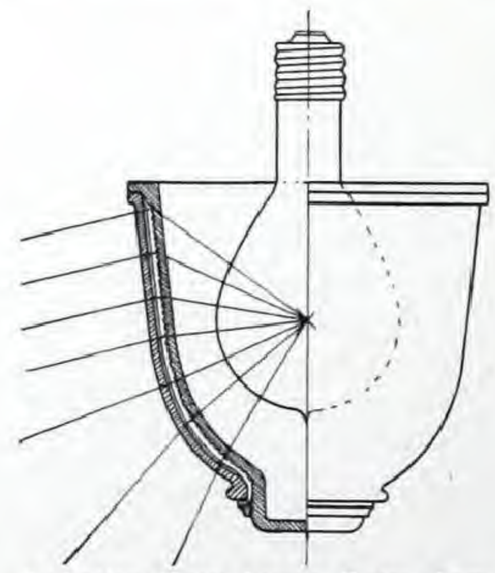
The Holophane Superlux refractor consists of two pieces of pressed crystal glass nested one within the other and clamped together so as to form a single unit. The inside surface of the inner piece and the outside surface of the outer piece are smooth; so that in the assembled unit, both inside and outside surfaces are smooth, making cleaning easy. The outside surface of the inner piece has horizontal prisms so designed as to bend downward the upward emitted light and to bend upward a part of the light emitted downward. The light emitted downward near the vertical, is redistributed to give a good distribution under the unit. This arrangement of horizontal prisms greatly increases the light emitted at angles between 60 and 85 degrees with the vertical and hence greatly extends the radius of effective illumination, but at the expense of the light which would naturally fall directly under the unit. The inside surface of the outside piece has vertical flutes which, while not materially altering the distribution produced by the inside piece, diffuse the light and reduce the brilliancy of the unshielded filament. In short, it is the function of the inside piece to produce the desired light distribution, while the outside piece diffuses the light and produces an attractive appearance in the unit as a whole. The two pieces are so fitted and clamped together that it is impossible for dirt, even in the most finely divided form, to get between them.

The Superlux Refractor is made in two types: The closed type which is always used with Luxsolite Dust-Proof Pendants, and the open type which is used with streethoods. It is very rugged in construction and not subject to excessive breakage.

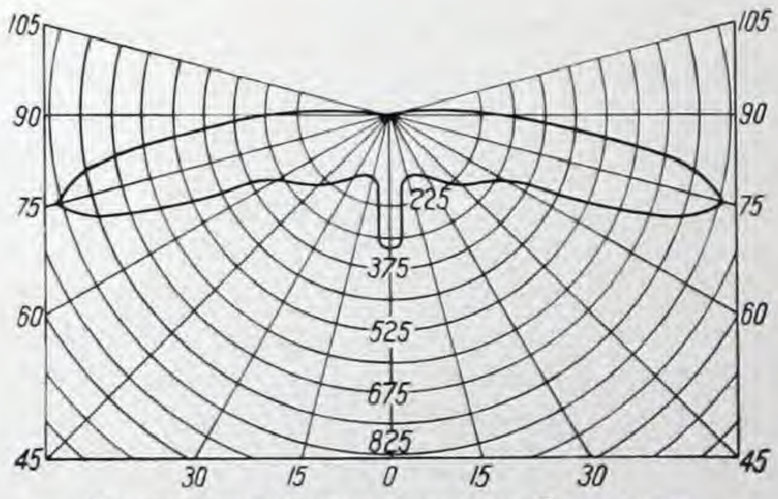
List Prices—For list prices, style numbers and dimensions, see page 908.



SHOWING CORRECT LIGHT CENTER, LOCATION AND RELATIVE POSITIONS OF REFRACTOR AND GLOBE



SHOWING HOW LIGHT RAYS ARE DIVERTED BY THE REFRACTING PRISMS

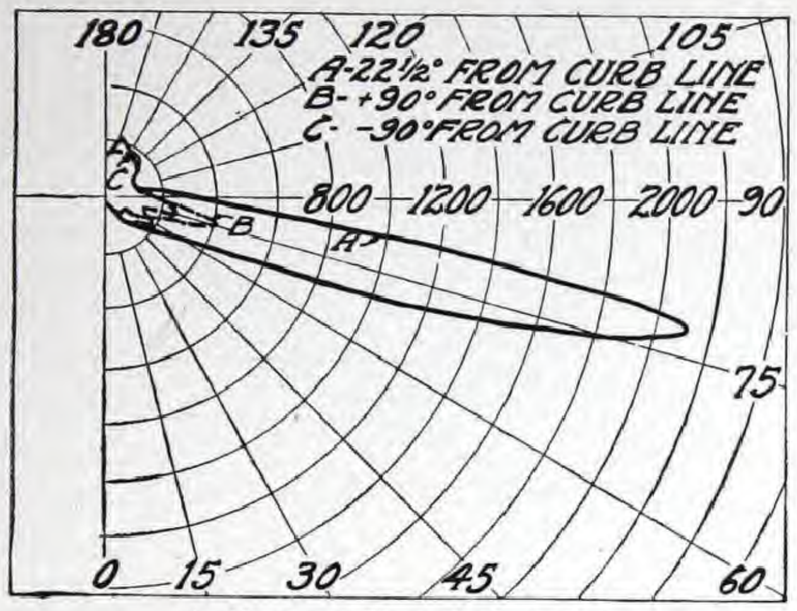


DISTRIBUTION CURVE SUPERLUX REFRACTOR

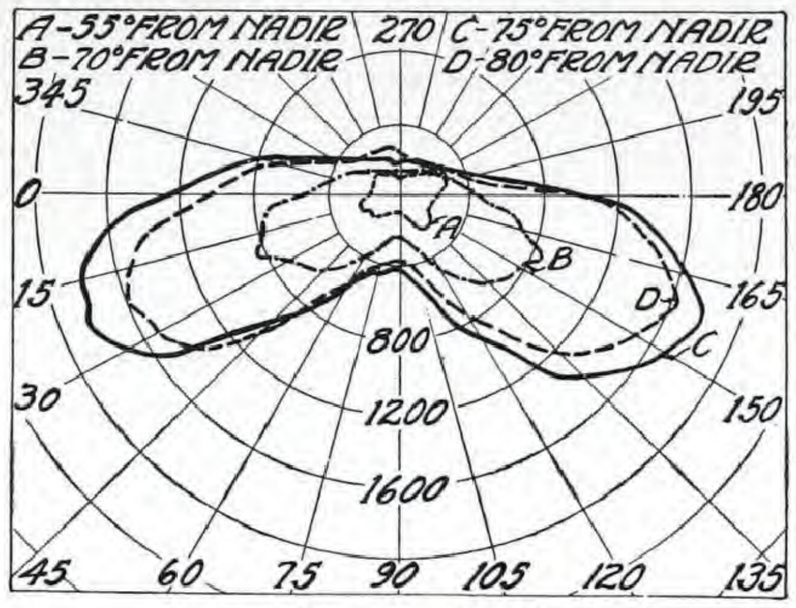
GLASSWARE FOR STREET LIGHTING UNITS—Continued

HOLOPHANE REFRACTORS FOR ASYMMETRIC DISTRIBUTION IN STREET LIGHTING SERVICE

CANDLE POWER DISTRIBUTION FROM WESTINGHOUSE BI-LUX REFRACTOR

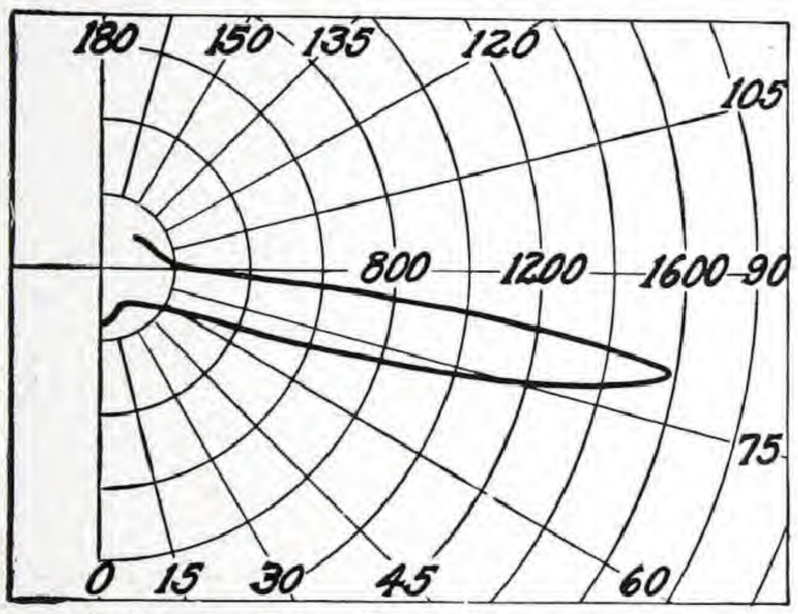


In Vertical Planes 22½° from the Curb Line

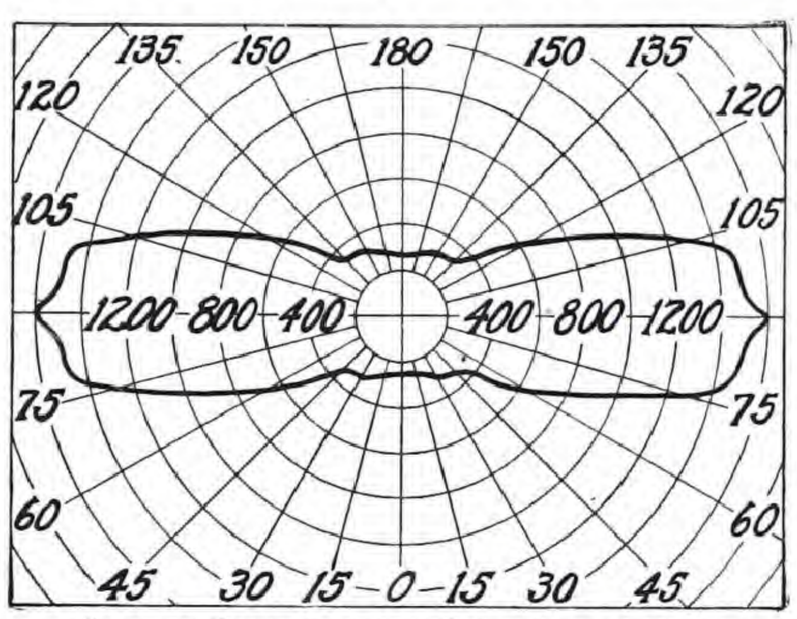


Lateral Distribution in Cones 55, 70, 75 and 80° from Nadir

CANDLE POWER DISTRIBUTION FROM 8½-INCH 2-WAY REFRACTOR

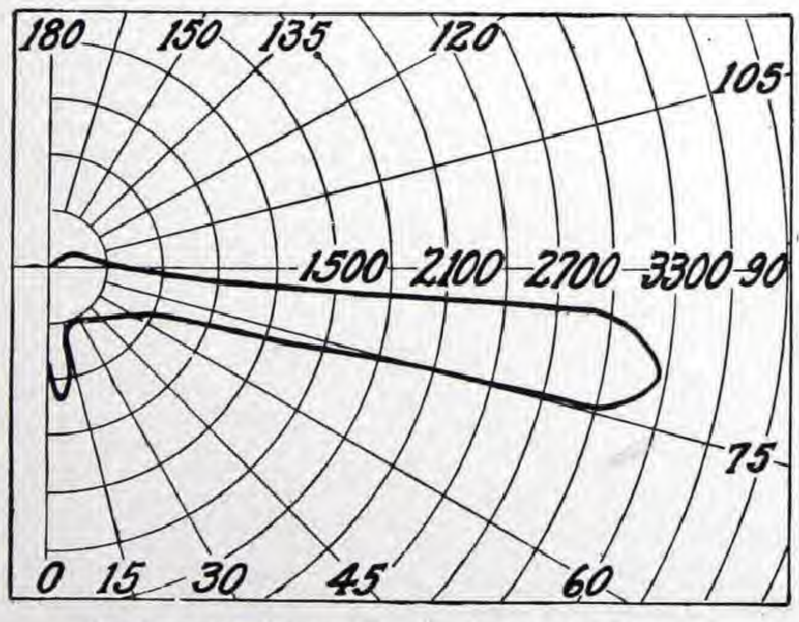


In Vertical Plane Up and Down the Street

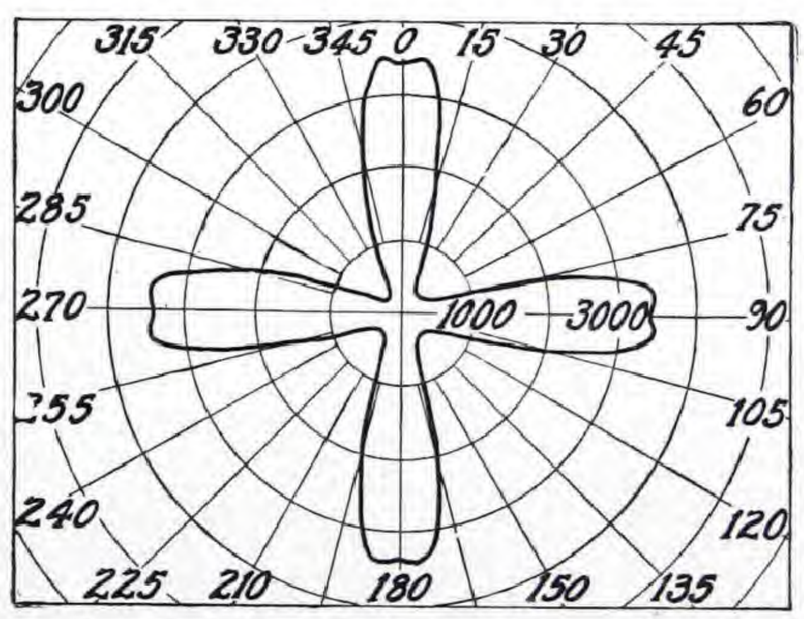


Lateral Distribution in Cone 80° from Nadir

CANDLE POWER DISTRIBUTION FROM 8½-INCH 4-WAY REFRACTOR



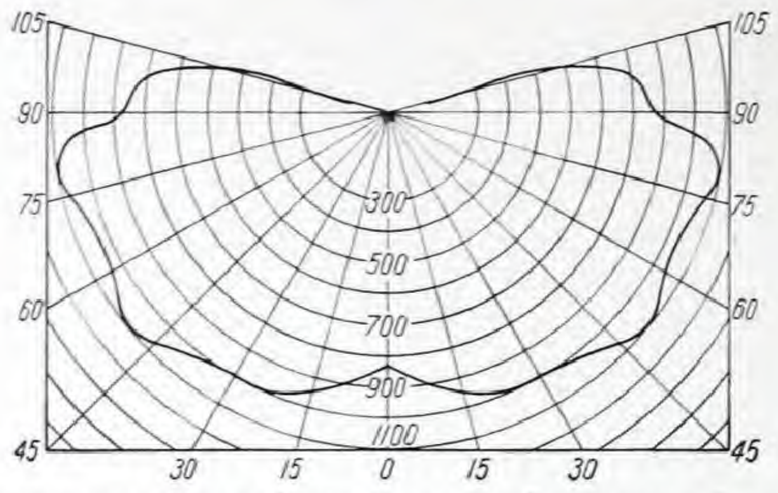
In Vertical Plane Up and Down the Street



Lateral Distribution in Cone 80° from Nadir

GLASSWARE FOR STREET LIGHTING UNITS—Continued

GLOBES FOR MULTILUX STREETHOODS AND LUXSOLITE PENDANTS



DISTRIBUTION CURVE, LIGHT ALABASTER RECTILINEAR GLOBE

LUXSOLITE RECTILINEAR GLOBE

Rectilinear Globes

Experience has shown that glare from a street lighting unit is not only unpleasant but extremely dangerous, blinding alike to pedestrians and vehicle drivers. Glare has sometimes been defined as misdirected light. A light source of high intrinsic brilliancy, such as an unshielded arc or the filament of a type C lamp unshielded by diffusing glassware invariably produces glare, and the pupil of the human eye becomes so contracted by the intensity of the light source that it cannot, with any degree of precision, discern objects, either stationary or in motion, between it and the point where the lamp is located. In fact for a considerable period after passing beyond the range of such a light source, the eye is still incapable of functioning normally.

The primary purpose of diffusing glassware on a street lighting unit is to convert the piercing glare of high-powered lamps into useful, comfortable, and properly distributed light. It is a well known fact that more unmodified light is required to see objects clearly than is necessary when the glare is eliminated. Consequently, the use of diffusing glassware increases the utility of the light produced by the lamps, the percentage of increase depending upon the efficiency of the glassware itself.

Rectilinear glassware is blown in carefully prepared moulds by the most skillful glass blowers. The outer surface is made up of a series of horizontal and vertical flutes so arranged as to produce a diffusing and sparkling effect. The flutes are so arranged that the globe can be cleaned easily with a damp cloth. Rectilinear glass is furnished in two densities, light alabaster and dense alabaster. When refractors are used light alabaster globes are recommended.

Rectilinear globes have been designed to diffuse the light both by means of the opalescense of the glassware, and by the arrangement of the flutes. Its sparkling appearance is very attractive and since the absorption of light is very small the efficiency is correspondingly high.

Monax Globes

Monax glassware is the result of many years of development in the glassmaking art. In common with all Luxsolite globes they are blown by hand. While this method introduces the human element in manufacturing, a careful inspection, under conditions similar to those in service, is made before the globe is accepted. Thus a uniform thickness in all parts of the globe is assured.

The diffusing effect provided by Monax glass is obtained without loss of light, because of the care taken in manufacture. By reflected light Monax glass has an appearance by day fully as attractive as it appears by transmitted light at night. They are blown as thin as is consistent with strength; thus glare is entirely absent and the lamp filament is not visible through the globe. Monax glassware presents no abrased surfaces on either the inside or the outside. No decomposition or chemical breakdown takes place; thus it is easily cleaned by simply wiping with a damp cloth.

List Prices—For list prices, style numbers and dimensions, see page 909.

LIST PRICES

HOLOPHANE REFRACTORS

Description	Fig. No.	Style No.	Ship. Wt. Lb. Ea.	List Price
Bi-lux cylindrical type	26	354010	10	$35 00
Bi-lux open bowl type	22	354160	9	35 00
Bi-lux closed bowl type	23	354161	9	35 00
Superlux open type	22	352939	9	6 60
Superlux closed type	23	352940	9	6 60
2-Way	28	353974	9	7 50
4-Way	28	353975	9	7 50
Large bowl type	25	351761	15	15 00
Skirted open type	27	252212	8	6 60
Skirted closed type	27	336793	8	6 60

Order by Style Number

GLASSWARE FOR STREET LIGHTING UNITS—Continued

LIST PRICES—Continued

GLASS PANELS

Description	Fig. No.	Style No.	Ship. Wt. Lb., Each	List Price
Syenite side panels for Octagonal Junior lighting units	33	353331	13	$0 60
Syenite top panels for Octagonal Junior lighting units	35	351737	8	60
Colonial opal side panels for Octagonal Junior lighting units	33	351548	13	1 10
Colonial opal top panels for Octagonal Junior lighting units	35	351738	8	1 10
Florentine side panels for Octagonal Junior lighting units	33	351557	13	60
Florentine top panels for Octagonal Junior lighting units	35	351739	8	60
Syenite side panels for Octagonal Senior lighting units	32	351375	19	80
Syenite top panels for Octagonal Senior lighting units	34	351377	11	80
Colonial opal side panels for Octagonal Senior lighting units	32	353332	19	1 30
Colonial opal top panels for Octagonal Senior lighting units	34	353333	11	1 30
Florentine side panels for Octagonal Senior lighting units	32	351565	19	80
Florentine top panels for Octagonal Senior lighting units	34	351564	11	80
Lower Syenite glass panels for Octagonal Junior Lantern	37	351645	7	60
Lower Colonial opal glass panels for Octagonal Junior Lantern	37	351655	7	1 10
Lower Florentine glass panels for Octagonal Junior Lantern	37	351483	7	60
Lower Syenite glass panels for Octagonal Senior Lantern	36	351490	9	60
Lower Colonial opal glass panel for Octagonal Senior Lantern	36	353334	9	1 10
Lower Florentine glass panels for Octagonal Senior Lantern	36	351566	9	60

GLOBES AND CANOPIES FOR POST TOP UNITS

	Globe				Canopy			
Description	Fig. No.	Style No.	Ship. Wt. Lb.	List Price	Fig. No.	Style No.	Ship. Wt. Lb.	List Price
Sol-Lux Sr. Monax	5	336150	40	$12 10	1	338918	22	$ 7 80
Sol-Lux Sr. rectilinear light alabaster	5	354063	40	12 10	1	354062	22	7 80
Sol-Lux Sr. rectilinear dense alabaster	5	354132	40	12 10	1	354133	22	7 80
Sol-Lux Jr. Monax	6	336148	39	8 10	2	338919	20	6 30
Sol-Lux Jr. rectilinear light alabaster	6	354074	39	8 10	2	354073	20	6 30
Sol-Lux Jr. rectilinear dense alabaster	6	354130	39	8 10	2	354131	20	6 30
Paragon Sr. Monax	7	352914	45	11 00	3	345907	23	10 50
Paragon Sr. rectilinear light alabaster	7	353281	45	11 00	3	345908	23	10 50
Paragon Sr. rectilinear dense alabaster	7	354128	45	11 00	3	354129	23	10 50
Paragon Jr. Monax	8	353224	42	9 30	4	345909	20	8 50
Paragon Jr. rectilinear light alabaster	8	353282	42	9 30	4	345910	20	8 50
Paragon Jr. rectilinear dense alabaster	8	354126	42	9 30	4	354127	20	8 50
Washington, large size, light alabaster	13	354122	50	17 00	9	354121	25	7 30
Washington, medium size, light alabaster	14	354120	45	12 00	10	354119	23	5 50
Washington, small size, light alabaster	15	354118	40	11 60	11	354117	20	5 20
Cincinnati Monax for 8-inch fitter	16	351583	38	12 00	12	351581	23	10 50
Cincinnati Monax for 9⅜-inch fitter	20	351584	38	12 00	12	351581	23	10 50
Holophane ornamental refractor globe parts only	21	350529	75	36 00	17	354174	20	5 00

GLOBES FOR PENDENT UNITS

Description	Fig. No.	Style No.	Ship. Wt. Lb., Each	List Price
Luxsolite clear	18	220258	12	$5 50
Luxsolite alabaster	18	220259	12	6 10
Luxsolite Monax	18	220260	12	6 10
Luxsolite rectilinear clear	18	350571	12	5 50
Luxsolite rectilinear light alabaster	18	350572	12	7 00
Luxsolite rectilinear dense alabaster	18	354139	12	7 00
Polaris rectilinear light alabaster	19	352498	10	7 00
Polaris rectilinear dense alabaster	19	352499	10	7 00
Sol-Lux diffuser Monax	24	336063	8	4 70

MONAX BALL GLOBES

Dia. of Globe, In.	Diameter of Fitter, Inches Bottom	Top	Style No.	Ship. Wt. Lb. Each	List Price Per Doz.
8	6	..	335637	5	
9	6	..	335646	6	
10	6	..	335638	7	
12	6	..	335639	8	
12	6	6	335648	8	
12	8	..	335640	8	
14	8	6	335649	14	
14	7	..	335650	14	
14	8	..	335641	14	
16	8	..	335643	18	
16	8	6	335644	18	
18	8	6	335651	26	
20	8	..	335652	36	
12	8	¾	351553	8	
12	6	Ruby Glass	335653	8	
14	8	Ruby Glass	335654	14	

On Request

Order by Style Number

GLASSWARE FOR STREET LIGHTING UNITS—Continued

GLOBE DIMENSIONS IN INCHES

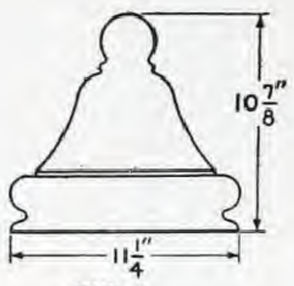


FIG. 1

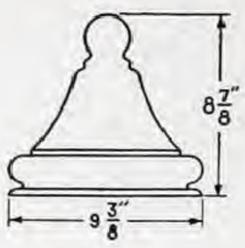


FIG. 2

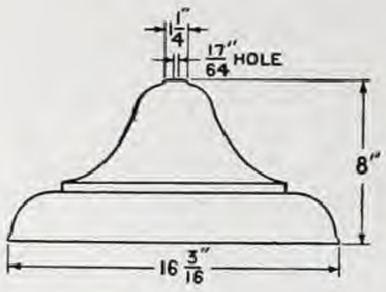


FIG. 3

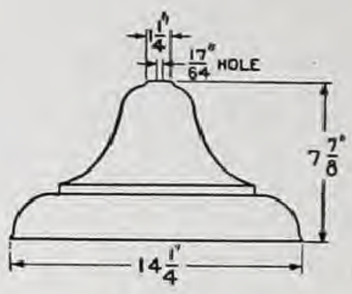


FIG. 4

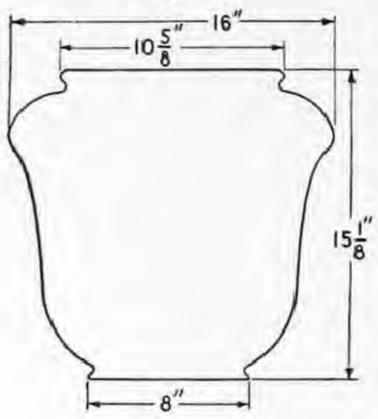


FIG. 5

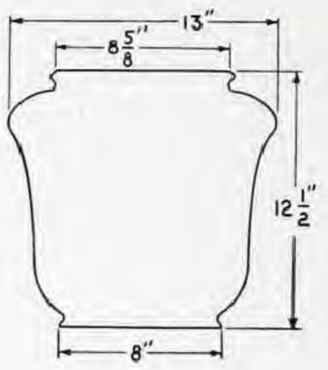


FIG. 6

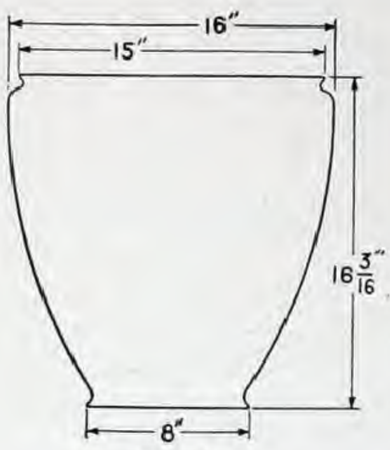


FIG. 7

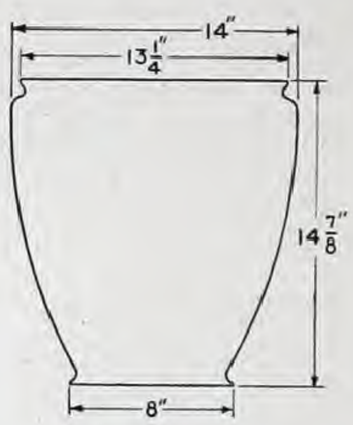


FIG. 8

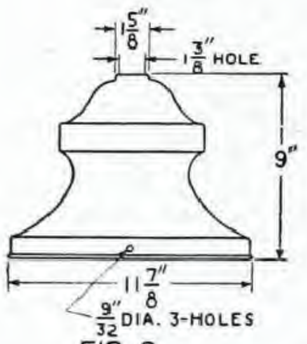


FIG. 9

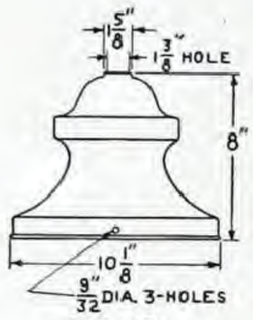


FIG. 10

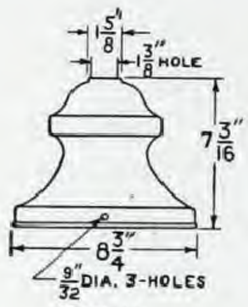


FIG. 11

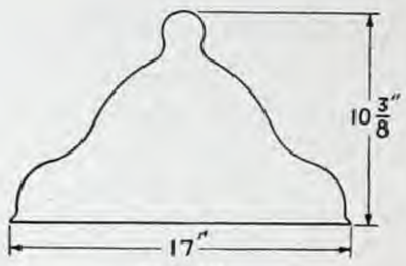


FIG. 12

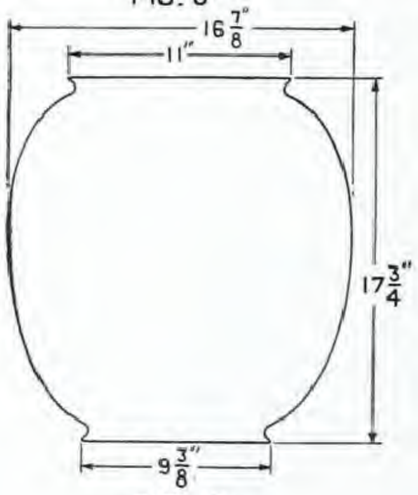


FIG. 13

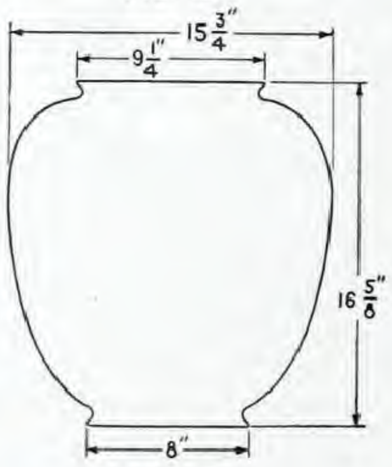


FIG. 14

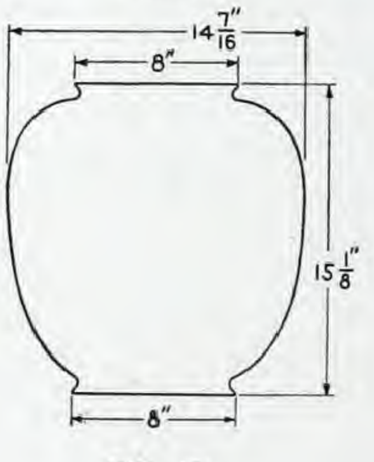


FIG. 15

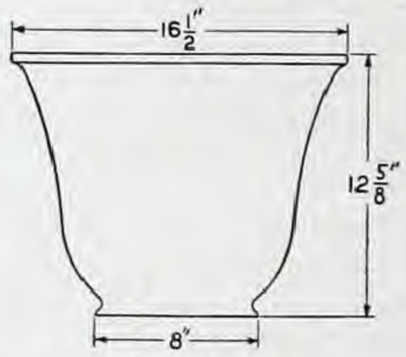


FIG. 16

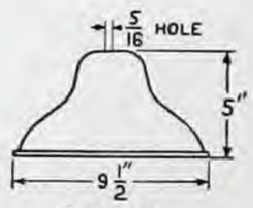


FIG. 17

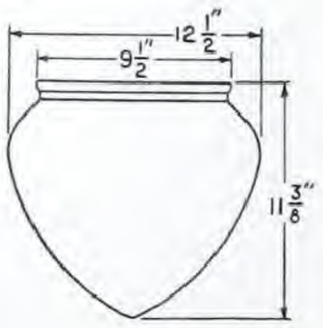


FIG. 18

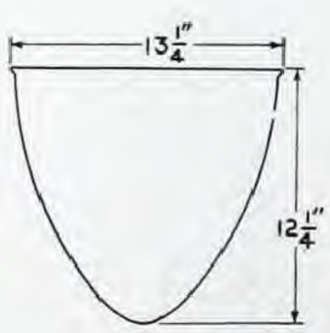


FIG. 19

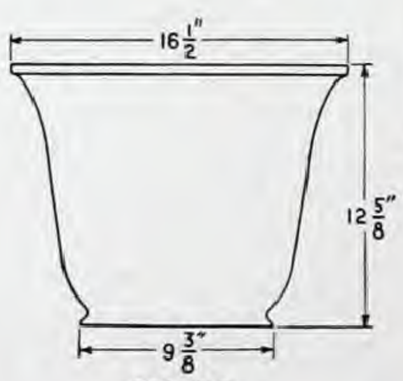


FIG. 20

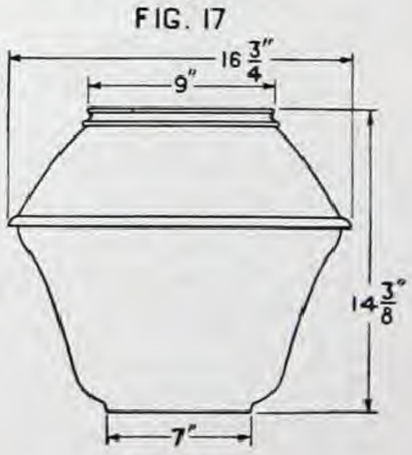


FIG. 21

Dimensions are for reference only. For official dimensions apply to the nearest district office.

GLASSWARE FOR STREET LIGHTING UNITS—Continued

REFRACTOR DIMENSIONS IN INCHES

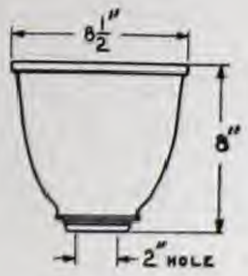


FIG. 22

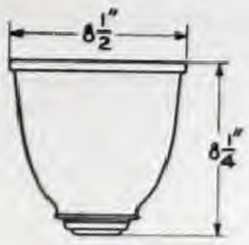


FIG. 23

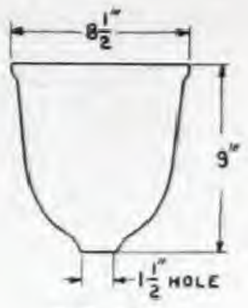


FIG. 24

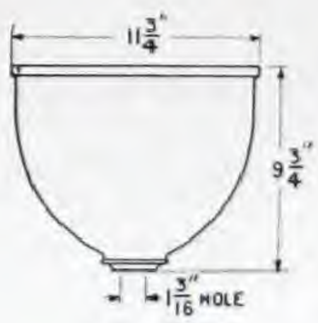


FIG. 25

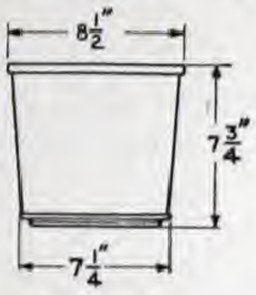


FIG. 26

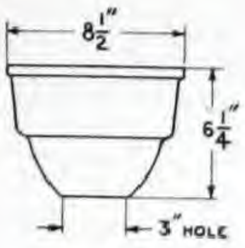


FIG. 27

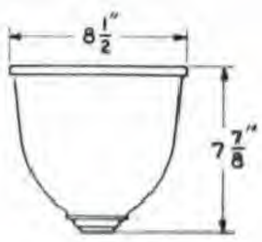


FIG. 28

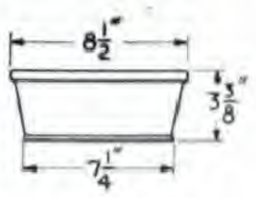


FIG. 29

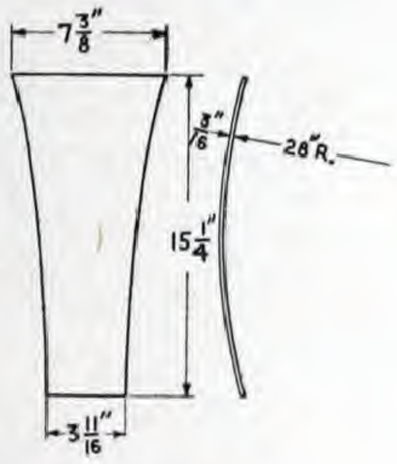


FIG. 30

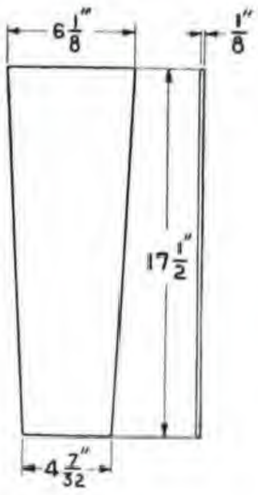


FIG. 31

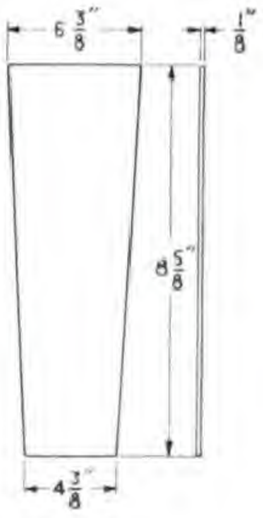


FIG. 32

FIG. 33

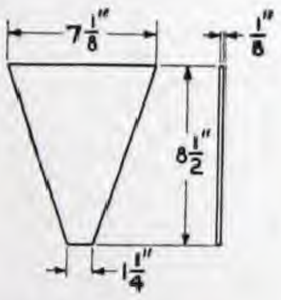


FIG. 34

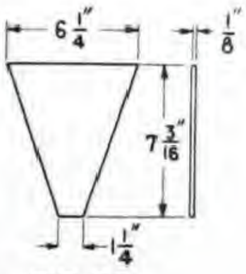


FIG. 35

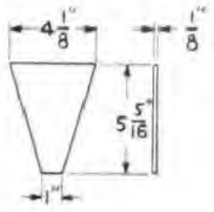


FIG. 36

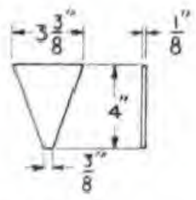


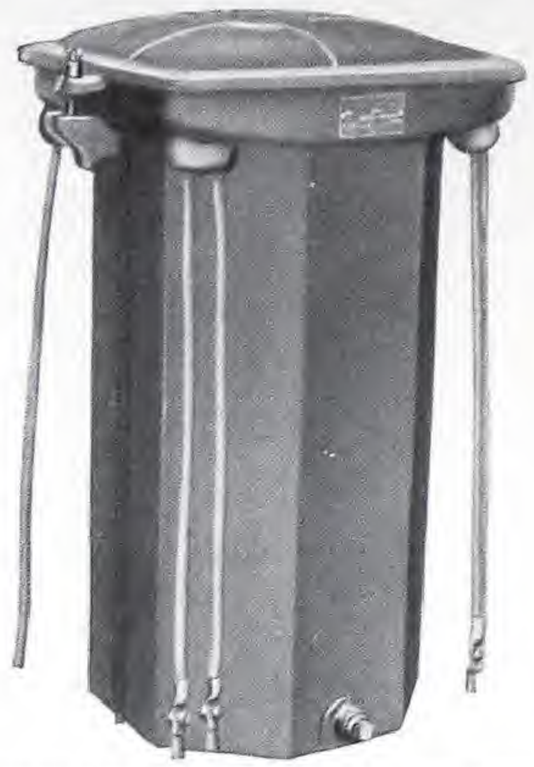
FIG. 37

Dimensions are for reference only. For official dimensions apply to the nearest district office.

ADJUSTER SOCKET TRANSFORMERS

For 2200-Volt, 6.6-Ampere Secondary

Transformers for other voltages, frequencies and currents can be furnished on order



TRANSFORMER FOR ADJUSTER SOCKET SYSTEM

The adjuster socket system consists of a simple series of lamps connected across the secondary terminals of a constant-potential transformer. A reactance coil is connected in shunt across the terminals of each lamp and operates to maintain the continuity of the circuit and the normal voltage on the remaining lamps in case any lamp burns out or is removed. While it is possible to connect the lamps in series directly across the main, it is always advisable to provide a transformer having taps for a close adjustment of the voltage required.

The transformers listed below are provided with taps to enable any voltage to be obtained within 1 per cent of that required by the circuit. All taps are brought to terminal blocks inside the transformer case and no soldered connections need be made in changing these taps.

Regulation—As the lamps go out and the reactance coils take their place in the circuit, the current will never rise over 2 per cent above normal, this point being reached with from 10 to 15 per cent of the lamps out.

List price includes transformer, one set of hanger irons, two fuse blocks (Style No. 29865 or 147190) and the necessary oil.

When ordering, specify separately all the items included in the list price as shown below:

Cap. Kv-a.	Secondary Voltage Min.	Secondary Voltage Max.	Gallons Oil	Style No. Hanger Irons	60-Cycle Transformers: Approx. Shipping Wt., Lb.	60-Cycle Transformers: Style No.	60-Cycle Transformers: List Price	25-Cycle Transformers: Approx. Shipping Wt., Lb.	25-Cycle Transformers: Style No.	25-Cycle Transformers: List Price
1	81	151	¾	109712	106	414607	$ 85 00	156	414610	$110 00
2	170	303	1¾	109712	165	414608	110 00	225	275197	145 00
3	252	454	1¾	109712	193	414609	130 00	260	275198	200 00
5	416	756	2½	109712	230	275191	160 00	350	275199	285 00
7.5	625	1138	4	109713	315	275192	210 00	500	275200	360 00
10	835	1515	5	109713	394	275193	235 00	565	275201	435 00
15	1250	2270	8	109713	460	275194	290 00	748	275202	590 00
20	1670	3030	14½	234482	715	275195	360 00	...	.....	.....

DATA ON WESTINGHOUSE SERIES INCANDESCENT LAMPS

Amps.	Nominal Candle Power	Total Lumens	Average Volts	Average Watts	Amps.	Nominal Candle Power	Total Lumens	Average Volts	Average Watts
6.6	60	600	6.6	43.7	15.0	400	4000	14.8	222.0
6.6	80	800	8.3	54.8	15.0	600	6000	15.5	310.0
6.6	100	1000	9.9	65.4	20.0	1000	10000	25.9	518.0
6.6	250	2500	23.1	152.5	20.0	1500	15000	37.5	750.0
6.6	400	4000	37.0	244.2	20.0	2500	25000	60.6	1212.0
6.6	600	6000	54.7	361.0	....	....	.....	....	.....

REACTANCE COIL REGULATOR OUTFITS

For 2200-Volt 60-Cycle Primary; 6.6-Ampere Secondary

Transformers for other voltages, frequencies and currents can be furnished on order

The reactance coil regulator herein described is particularly useful on circuits which are remote from stations where apparatus can be housed. The outfits are especially designed for service where pole mounting and operation with a time switch is desirable. This simplifies the circuit construction and thus reduces the expense of serving outlying towns which may have constant potential feeder service for residence lighting, but for street lighting have nothing available except multiple lamps or long special series circuits from larger existing installations. They are used with the inexpensive and well-known film cutout streethoods, no change being required in these devices.

Construction

The standard adjuster socket transformers are regularly used with reactance coils to make up these reactance coil regulators. These transformers are thoroughly described under the adjuster socket system. By reason of their tap arrangement, it is possible to adjust the current to within less than 1 per cent of any required value.

The reactance coils used in connection with this system are separately mounted, thus making it possible to adjust the taps conveniently, and obtain any desired power factor and consequent protection within the range of the apparatus.

Operation

This system keeps the current in the series lamp circuit from rising abnormally by the use of a reactance in series with the lamp. If one lamp goes out, the impedance of the circuit is diminished by a much lower percentage because of this constant fixed reactance in series with the lamp. Consequently the larger the proportional value of reactance to lamp resistance, the closer will be the regulation with a large percentage of lamps out.

REACTANCE COIL REGULATOR OUTFITS—Continued

Max. Kw.	Transformers: Range of Volts	Transformers: Style No. Transformers	Transformers: Style No. Hanger Irons	Transformers: Gal. Oil	Reactance Coils: Required Volts	Reactance Coils: Style No. Reactance Coils	Reactance Coils: Style No. Hanger Irons	Reactance Coils: Gal. Oil	Total Shipping Wt., Lb.	List Price
Rated on 80 Per Cent Power Factor										
2.4	252– 454	414609	109712	1¾	275	406385	.....	....	310	$230 00
4.0	416– 756	275191	109712	2½	455	406385	.....	....	346	260 00
6.0	625–1138	275192	109713	4	685	412226	109713	8	665	410 00
8.0	835–1515	275193	109713	5	910	412226	109713	8	744	435 00
12.0	1250–2270	275194	109713	8	1365	412265	109713	11½	990	620 00
16.0	1670–3030	275195	234482	14½	1820	412265	109713	11½	1245	690 00
Rated on 50 Per Cent Power Factor										
1.5	252– 454	414609	109712	1¾	395	406385	.....	....	310	230 00
2.5	416– 756	275191	109712	2½	655	412226	109713	8	580	360 00
3.75	625–1138	275192	109713	4	985	412226	109713	8	665	410 00
5.0	835–1515	275193	109713	5	1310	412226	109713	8	744	435 00
7.5	1250–2270	275194	109713	8	1970	412265	109713	11½	990	620 00
10.0	1670–3030	275195	234482	14½	2600	412265	109713	11½	1245	690 00

REACTANCE COILS

For 60-Cycle 6.6-Ampere Series Film-Cutout Circuits

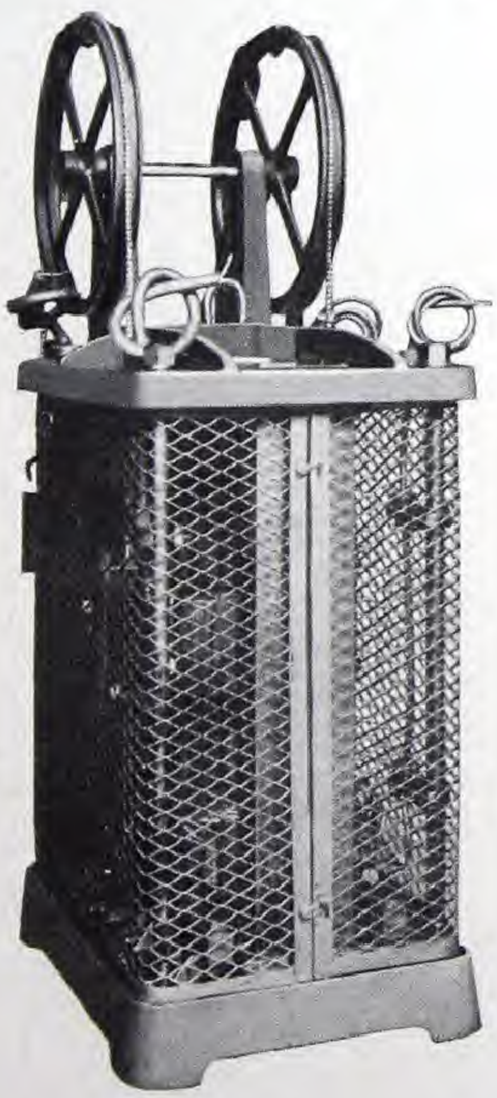
For use in connection with Adjuster-Socket Transformers listed on a previous page to make up Reactance Coil Regulator Outfits as listed above

Style number includes reactance coil only. **List price** includes reactance coil, one pair of hanger irons and the necessary oil. **When ordering,** specify, by style number and description, all items included in the list price.

Maximum Kv-a.	Maximum Volts	Gallons Oil	Approx. Shipping Wt., Lb.	Style No. Hanger Irons	Style No. Coil	List Price
4.0	600	*	116	*	406385	$100 00
8.5	1290	8	350	109713	412226	200 00
17.2	2600	11½	530	109713	412265	330 00

*Style No. 406385 is gum-filled and is mounted by lag screws—no oil or hanger irons required.

MOVING-COIL REGULATORS AND CONTROL PANELS



Station-Type Regulators

The moving-coil regulator depends upon the electrical repulsion existing between the primary and secondary coils of the transformer under load to produce and maintain a constant current in the secondary or lamp circuit. The regulator can be adjusted to maintain its rated secondary current under the normal conditions of load, primary voltage and frequency, regardless of the number of lamps in the circuit. The coils consist of a number of concentric sections and are known and described as ventilated coils. The individual sections consist of two layers, having one side of each conductor directly exposed to the air. No taping is used except for the protection of leads. The coils are insulated from the metal parts by Micarta tubes. These coils are most rugged and durable, withstanding heavy strains and overloads to the best advantage, and by reason of their light weight, make possible a very high sensitiveness in regulation.

The rating and performance of these regulators is based on average load conditions, consisting of an incandescent load in unity power factor and a line having 5 per cent ohmic and 10 per cent reactive drop. Their rating in kilowatts at the terminals of the regulator with unity power factor would be 9 per cent above the standard rating.

Enclosed carbon arc lamps may be operated from these regulators when equipped with a dash pot. A Westinghouse 6.6-ampere or 7.5-ampere enclosed carbon arc lamp, adjusted in accordance with the specifications requires .62 or .70 kilovolt-amperes respectively of rated regulator capacity for its operation.

The efficiency of these regulators at full load varies from 90 to 96 per cent for the various sizes. The power factor similarly varies from 83 to 86 per cent.

MOVING-COIL REGULATORS AND CONTROL PANELS—Continued

The regulator will maintain the secondary current within 2 per cent of its normal rating in the 4, 8 and 12 kilowatt sizes, or within 1 per cent on the larger sizes.

Circuits—The 34, 50 and 68-kilowatt sizes are arranged to operate two inter-connected circuits. To keep the load voltage to a minimum, each circuit should be of approximately one-half the capacity of the regulator. Two circuits may be operated from any regulator by the use of a two-circuit panel.

Taps—Primary taps are arranged for 2400, 2200 and 2000 volts. Secondary taps are provided for 80 and 90 per cent of full load.

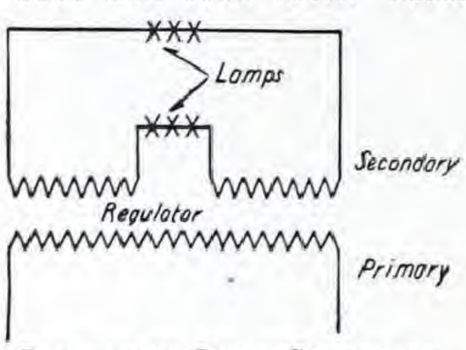


DIAGRAM OF INTER-CONNECTED SECONDARY CIRCUITS

Automatic operation with a time switch is successful, if the load is such that the coil separation is not more than 2 inches. With light loads, auxiliary blocks or catches should be installed for reducing the movement of the secondary coil towards the primary coil when the power is interrupted.

Control Panels

Control panels of black-marine-finished slate mounted on pipe frame work are furnished.

The standard panel for single-circuit, constant-current regulators, is 16 inches by 36 inches and has mounted on it:

(a) One four-pole single-throw type I non-automatic oil circuit-breaker, which, with one operation, connects both the primary and secondary coils to their respective circuits.

(b) One alternating-current high-voltage type SM ammeter.

(c) One double-pole fuse block, (2 single-pole fuse blocks on high-capacity).

(d) Four enclosed fuses (two extra ones) mounted on the back and connected in the primary circuit. Where the working voltage of the regulator to be controlled exceeds 4000 volts, a current transformer (type KA) for the ammeter, which is connected in the secondary circuit, is furnished complete with mounting brackets.

Sub-panels for watthour meters can be supplied for any of the standard panels. These sub-panels are black-marine-finished slate, 16 inches high, mounted on the same frame as the standard panel and directly under it. Apparatus mounted thereon consists of:

(a) One type OA watthour meter.

(b) One voltage transformer.

(c) One current transformer.

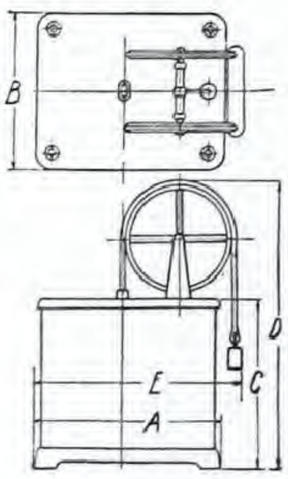
(d) One double-pole fuse block with four fuses, (two extra) for the voltage transformer.

REGULATING TRANSFORMERS FOR 2200-VOLT PRIMARY AND 6.6—7.5*-AMPERE SECONDARY CIRCUITS

Transformers for other voltages, frequencies or currents can be furnished on order

60-CYCLE TRANSFORMERS		25-CYCLE TRANSFORMERS		APPROX. WEIGHT, LB.		
Capacity Kw.	Style No.	Capacity Kw.	Style No.	Net	Shipping	List Price
4	200599	.....	.....	480	725	$430 00
8	200602	3	207257	685	985	500 00
12	200605	4.75	207260	850	1200	600 00
17	200608	7	207263	1000	1350	700 00
24	200611	10	207266	1250	1650	900 00
34	416372	14	207269	1350	1750	1050 00
50	236673	20	207272	1800	2200	1300 00
68	326332	28	207275	2200	2600	1750 00

Dashpot for regulator furnished at list price of $15.00. For 4-kw. regulator, order Style No. 200740; for 8-kw. to 34-kw. regulators, order Style No. 200739; for 50-kw. and 68-kw. regulators, order Style No. 200738.



OUTLINE DIMENSIONS IN INCHES

Moving-Coil Regulators

Kw.		Dimensions in Inches				
60 Cycles	25 Cycles	A	B	C	D	E
4	.....	21 5/8	17	30 1/2	50	29 1/4
8	3	23	18	33 3/8	55 1/8	31 5/8
12	4.75	25 1/8	20	33 3/4	55 1/8	32 5/8
17	7	26	21	35 1/8	57 3/8	33
24	10	28 3/4	26	25 3/8	58	34 1/2
34	14	32 1/2	29	34 7/8	55 1/2	36 3/4
50	20	34 1/4	30	36 1/4	60	40 1/4
..	28	36	32	36 1/8	63 3/4	42
68	.....	36	32	41 1/8	65 3/4	42

EFFICIENCY AND POWER FACTOR

Capacity Kw.	Max. Kv-a.	Efficiency Per Cent				Primary Power Factor Per Cent			
		Full Load	3/4 Load	1/2 Load	1/4 Load	Full Load	3/4 Load	1/2 Load	1/4 Load
4	4.21	91.8	90.7	86.7	73.7	90.6	85.0	56.7	22.0
8	8.64	93.9	92.9	89.8	79.4	91.8	86.0	57.3	23.7
12	12.05	94.1	93.2	90.2	80.1	91.1	85.5	57.0	22.0
17	18.15	94.7	93.9	91.1	81.8	91.3	85.5	57.0	22.8
24	25.7	95.2	94.5	92.0	83.2	91.5	85.8	57.2	22.9
34	35.8	95.5	94.9	92.6	84.4	89.9	84.3	56.1	22.0
50	53.2	96.1	95.4	93.4	86.1	89.1	83.6	55.6	22.3
68	72.0	96.3	95.7	93.7	86.8	90.1	84.5	56.4	22.5

*Taps are provided for either 6.6 or 7.5-ampere secondary circuit.

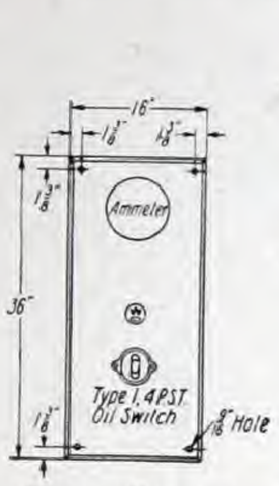
Order by Style Number

MOVING-COIL REGULATORS AND CONTROL PANELS—Continued

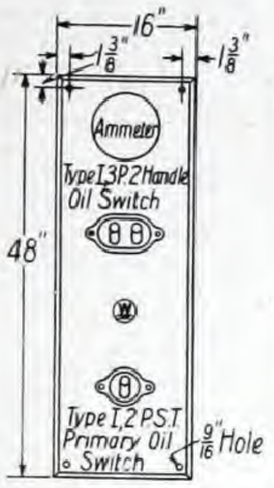
REGULATOR CONTROL PANELS

Description	Style No.	Approx. Ship. Wt., Lb.	List Price
Single-circuit, single-throw, (1 switch) control panel for 4 kv-a. regulator	370647	300	$160 00
Single-circuit, single-throw, (1 switch) control panel for 8 kv-a. regulator	370648	300	160 00
Single-circuit, single-throw, (1 switch) control panel for 12 kv-a. regulator	370649	300	160 00
Single-circuit, single-throw, (1 switch) control panel for 17 kv-a. regulator	370650	300	160 00
Single-circuit, single-throw, (2 switch) control panel for 4 kv-a. regulator	370651	350	200 00
Single-circuit, single-throw, (2 switch) control panel for 8 kv-a. regulator	370652	350	200 00
Single-circuit, single-throw, (2 switch) control panel for 12 kv-a. regulator	370653	350	200 00
Single-circuit, single-throw, (2 switch) control panel for 17 kv-a. regulator	370654	350	200 00
Single-circuit, single-throw, (2 switch) control panel for 24 kv-a. regulator	370655	350	200 00
Two-circuit, single-throw, (3 switch) control panel* for 34 kv-a. regulator	370656	450	300 00
Two-circuit, single-throw, (3 switch) control panel* for 50 kv-a. regulator	370657	450	300 00
Two-circuit, single-throw, (3 switch) control panel* for 68 kv-a. regulator	370658	450	300 00

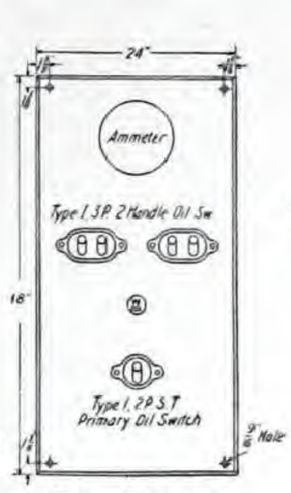
*Includes current transformer and mounting bracket.



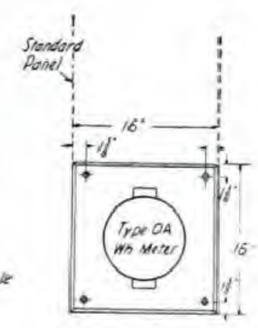
SINGLE-CIRCUIT, SINGLE-THROW (ONE SWITCH) CONTROL PANEL



SINGLE-CIRCUIT, SINGLE-THROW (TWO SWITCHES) CONTROL PANEL



TWO-CIRCUIT, SINGLE-THROW (THREE SWITCHES) CONTROL PANEL



SUB-PANEL

Description	Approx. Ship. Wt., Lb.	List Price
Sub-panel for any standard panel, complete with necessary watthour meter, current and voltage transformers, fuse blocks, and fuses	150	$175 00
Double-throw panels, add to above two-switch and three-switch single-throw panels	...	50 00
Current transformer and mounting bracket for a panel when operated on regulators of over 4000 volts	...	30 00

One-switch panel is 1¼ inches thick and has ¼-inch bevel; two-switch and three-switch panels are 1½ inches thick and have ⅜-inch bevel.

Width of sub-panel is 16 or 24 inches and thickness 1¼ or 1½ inches to match control panel.

Dimensions are for reference only. For official dimensions apply to the nearest district office.

POLE-TYPE REGULATORS

MOVING-COIL REGULATOR, POLE TYPE

The great increase in the extent of street lighting systems requiring regulating equipment remote from the central station, has made necessary the pole-type moving-coil regulator.

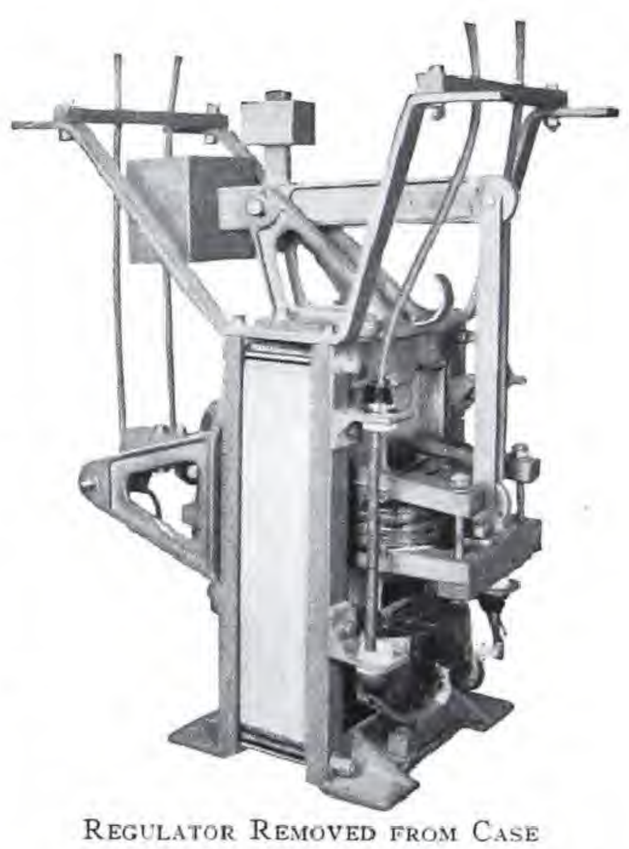
This regulator with its stationary primary coil and movable secondary coil, operates upon exactly the same principle as the station-type of moving-coil regulator. Since it is usually installed in out-of-the-way places, it is necessarily automatic in operation. The working parts are enclosed in a standard transformer case, which is mounted on the pole in the usual manner. Control is effected by means of time switches or remote control switches.

The regulator is designed for a standard primary voltage of 2300 volts, an extra tap being provided for 90 per cent of standard primary voltage. Whenever the voltage falls more than 3 per cent below normal, connections should be made to the 90 per cent tap. Regulators, unless otherwise specified, are furnished with connections made to the standard 2300 volt tap.

The standard secondary current is 6.6 amperes. Regulation is maintained within 1.5 per cent of normal, under all load conditions, from full load to short circuit. These regulators have been designed with sufficient margin to take care of 5 per cent line resistance and 10 per cent line reactance.

Two balancing weights are provided, adjustable to a right angle, so that perfect balance is obtained in all positions of the coil. Both weights are entirely above the oil and readily accessible. Set screws with lock nuts are provided to lock the weights securely in position.

Phosphor-bronze bumpers prevent the coils from striking together. Ball bearings are provided at all movable points of support. The movable coil is held



REGULATOR REMOVED FROM CASE

securely in a frame of Micarta angles.

Oil—Pole type regulators must operate in all weathers. To assure satisfactory performance during extremely cold weather Wemco C oil is furnished with these regulators and must be used for renewal purposes.

Lightning protection is essential on all overhead street lighting circuits. Type LV autovalve distribution arresters are recommended for this application. See Section 1-A.

MOVING-COIL REGULATORS AND CONTROL PANELS—Continued

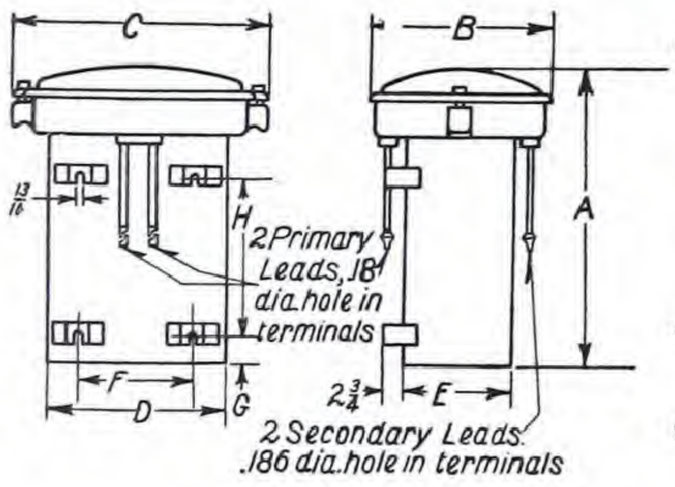
List price includes transformer, one set of hanger irons and the necessary oil.
When ordering, specify separately each item included in the list price as shown below.

POLE-TYPE REGULATORS

Capacity in Kw.	Gallons Oil	Approximate Weight, Lb. Net*	Approximate Weight, Lb. Shipping†	Style No. Regulator	Style No. Hanger Irons	List Price‡
2	18	405	735	358629	109714	$415 00
5	18	515	845	358630	109714	520 00
7½	31	600	1070	358631	129384	565 00
10	31	785	1145	358632	129384	580 00
15	58	875	1585	358633	365984	800 00
25	100	1675	2000	412053	293596	1040 00

EFFICIENCY AND POWER FACTOR

Capacity in Kw.	Efficiency				Primary Power Factor			
	Full Load	¾ Load	½ Load	¼ Load	Full Load	¾ Load	½ Load	¼ Load
2	91.0	88.3	88.3	71.6	75	55	38	21
5	93.5	91.5	88.3	78.0	75	55	38	21
7½	93.5	91.6	87.8	78.3	75	55	38	21
10	85.7	94.5	92.2	85.5	75	55	38	21
15	95.5	93.8	91.2	83.7	75	55	38	21
25	95.5	93.9	91.2	83.8	75	55	38	21



OUTLINE DIMENSIONS IN INCHES

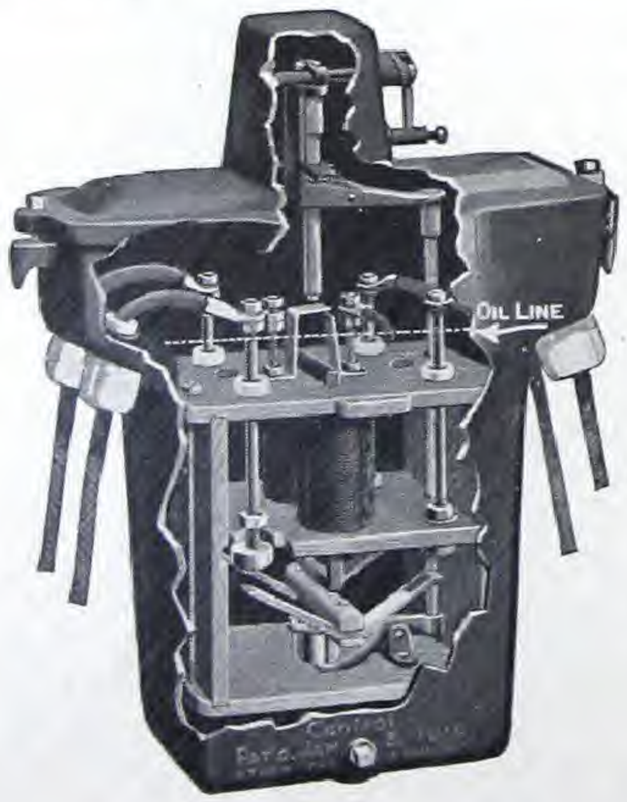
Capacity in Kw.	Dimensions in Inches A	B	C	D	E	F	G	H
2	34¼	23½	33¼	23¾	14¾	18	3½	18
5	34¼	23½	33¼	23¾	14¾	18	3½	18
7½	39¾	25	35¾	26¼	16¼	20½	3¾	21
10	39¾	25	35¾	26¼	16¼	20½	3¾	21
15	44¼	31	39¾	30¼	22¼	24½	3¾	25
25	56	39	48	36¼	24¼	30½	3	40

*Net weight includes transformer without oil.
†Shipping weight includes transformer boxed for shipment, complete with hanger irons and oil in container.
‡Fuse blocks are not included in this price. (See Style Number Index for Style Nos. 287325 or 147190.)
§R.C.O.C. switches can be furnished for special voltages, frequencies, etc.
¶The standard regulator operates on 60-cycle circuits. Regulators for other frequencies can be furnished on order.
Oil weighs approximately 7 pounds net per gallon and 8½ pounds shipping.
Dimensions are for reference only. For official dimensions apply to the nearest district office.

R.C.O.C. REMOTE-CONTROL OIL SWITCHES

For 60-Cycle Service§

The R.C.O.C. system has been devised for the remote control of outdoor lighting. R.C.O.C. switches operate on the solenoid principle. The solenoid winding may be energized from either a series or multiple street circuit already installed.



The general practice of street lighting calls for lower intensities after midnight than before. The reduced intensities are usually obtained by turning off a number of lamps at midnight leaving others to burn all night. The use of R.C.O.C. switches makes it possible to operate long or short hour lamps on either series or multiple circuits. Besides assuring absolute automatic remote control from the power house, they effect a considerable saving in cable and control lines and conserve central station floor space in many cases.

With these switches, it is possible to cascade constant-current transformers or the point of feed in a White Way lighting system. Ninety-five per cent of all outdoor lighting installations can be controlled by the R.C.O.C. system. Street lighting control problems should be referred to the nearest Westinghouse district office.

R.C.O.C. switches have no springs, require no winding, are not time clocks but are always on time.

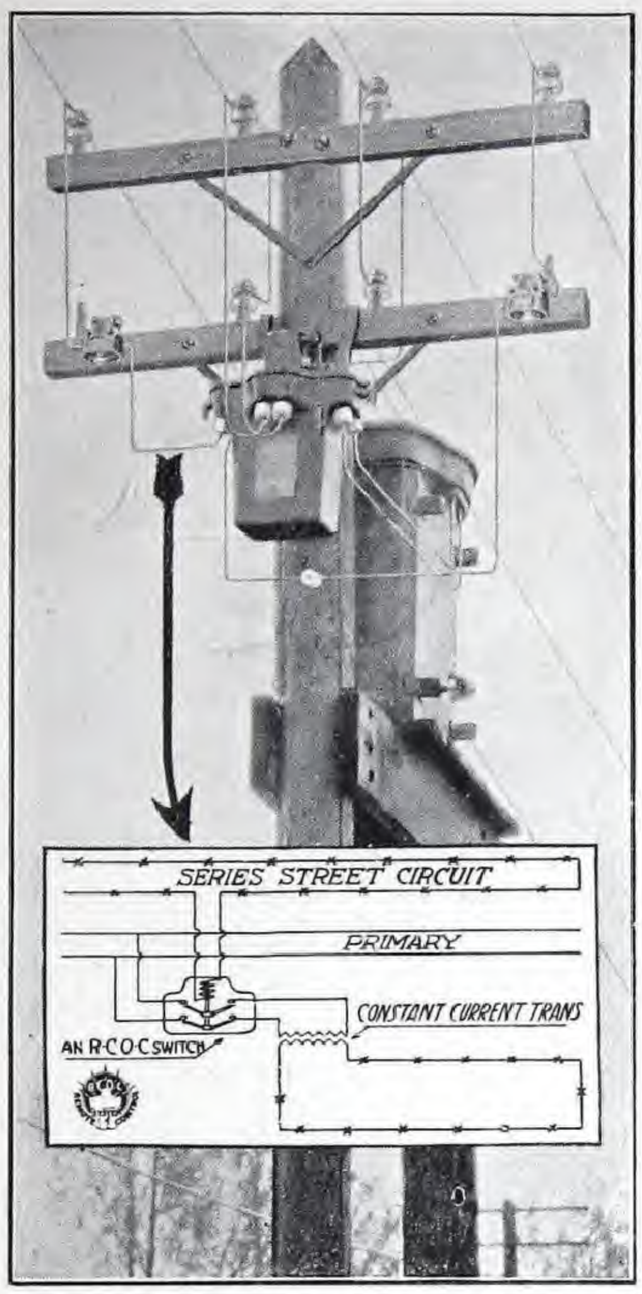
The combination lever attachment, which is now an integral part of all R.C.O.C. switches, makes it possible by simply changing the position of a lever to close series circuits by hand in daylight to locate burnt-out lamps; close series circuits by hand at night in case the circuit should open or other trouble develop, thus avoiding outages while the circuit is being restored to normal operation; cut out of service any load; restore to normal sequence any lamp groups whose regular stepping has been thrown out of order by lightning or other such cause.

Special oil that will not congeal at a temperature of 40 degrees below zero is furnished with each switch. To assure best results no other oil should be used.

All R.C.O.C. switches are guaranteed for one year against all defects of material or workmanship and lightning burnouts.

R.C.O.C. REMOTE-CONTROL OIL SWITCHES—Continued

STANDARD R.C.O.C. SWITCHES—SINGLE-THROW



R.C.O.C. switches have current-carrying capacity as follows: 75 amperes per pole at 220 volts, 30 amperes per pole at 6600 volts.

TYPE AN

Type AN switches are used where the load controlled is to have the same lamp hours as the solenoid control circuit.

Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
AN-14-S	6.6	6.6	3300	137	176	$250 00
AN-13-S	7.5	7.5	3300	137	176	250 00
AN-14-L	6.6	6.6	6600	159	202	270 00
AN-13-L	7.5	6.5	6600	159	202	270 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Switch Capacity Volts	Approx Wt., Lb. Net	Ship.	List Price
AN-18-L	...	110	6600	159	202	$270 00
AN-21-L	...	220	6600	159	202	270 00
AN-26-L	110	...	6600	159	202	270 00
AN-30-L	220	...	6600	159	202	270 00

TYPE ANS

Type ANS switches are used as single-pole switches having four breaks under oil where the solenoid winding is energized from a multiple circuit to control the loop of a series circuit or long and short-hour lamps on a series circuit.

Style No.	Control Circuit Volts D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
ANS-18-L	...	110	6600	159	202	$280 00
ANS-21-L	...	220	6600	159	202	280 00
ANS-26-L	110	...	6600	159	202	280 00
ANS-30-L	220	...	6600	159	202	280 00

TYPE MN

Type MN switches are equipped with a locking device which alternately opens and closes at the will of the power house operator by winking the solenoid control circuit.

Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
MN-14-S	6.6	6.6	3300	137	176	$268 00
MN-13-S	7.5	7.5	3300	137	176	268 00
MN-14-L	6.6	6.6	6600	159	202	288 00
MN-13-L	7.5	7.5	6600	159	202	288 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
MN-18-L	...	110	6600	159	202	$288 00
MN-21-L	...	220	6600	159	202	288 00
MN-26-L	110	...	6600	159	202	288 00
MN-30-L	220	...	6600	159	202	288 00

2-IN-1 R.C.O.C. SWITCHES

2-IN-1 R.C.O.C. switches are used only when the load to be controlled is 600 volts or less. Two switches of the same form or a combination of the AN and MN types are contained in the same case. This conserves space in manhole and both space and weight on pole top. They are made with single pole only. The capacity of the 2-IN-1 switches is 100 amperes at 220 volts.

TYPE MA

The type MA switch is a combination of one AN and one MN type switch. It is equipped with a locking device operated by momentarily interrupting the solenoid control circuit. This makes it possible to discontinue certain lamps before the circuit used to energize the solenoid is discontinued.

Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
MA-14-L	6.6	6.6	164	207	$394 00
MA-13-L	7.5	7.5	164	207	394 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
MA-18-L	...	110	164	207	$394 00
MA-21-L	...	220	164	207	394 00
MA-26-L	110	...	164	207	394 00
MA-30-L	220	...	164	207	394 00

MOVING-COIL REGULATORS AND CONTROL PANELS—Continued

List price includes transformer, one set of hanger irons and the necessary oil.
When ordering, specify separately each item included in the list price as shown below.

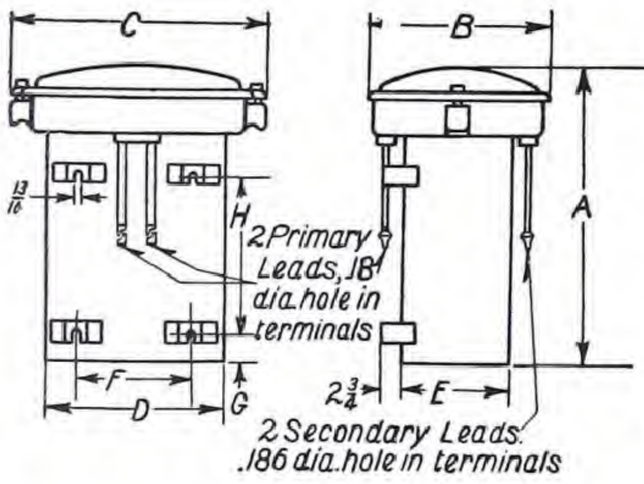
POLE-TYPE REGULATORS

Capacity in Kw.	Gallons Oil	Approximate Weight, Lb. Net*	Approximate Weight, Lb. Shipping†	Style No. Regulator	Style No. Hanger Irons	List Price‡
2	18	405	735	358629	109714	$415 00
5	18	515	845	358630	109714	520 00
7½	31	600	1070	358631	129384	565 00
10	31	785	1145	358632	129384	580 00
15	58	875	1585	358633	365984	800 00
25	100	1675	2000	412053	293596	1040 00

EFFICIENCY AND POWER FACTOR

Capacity in Kw.	Efficiency				Primary Power Factor			
	Full Load	¾ Load	½ Load	¼ Load	Full Load	¾ Load	½ Load	¼ Load
2	91.0	88.3	88.3	71.6	75	55	38	21
5	93.5	91.5	88.3	78.0	75	55	38	21
7½	93.5	91.6	87.8	78.3	75	55	38	21
10	85.7	94.5	92.2	85.5	75	55	38	21
15	95.5	93.8	91.2	83.7	75	55	38	21
25	95.5	93.9	91.2	83.8	75	55	38	21

OUTLINE DIMENSIONS IN INCHES



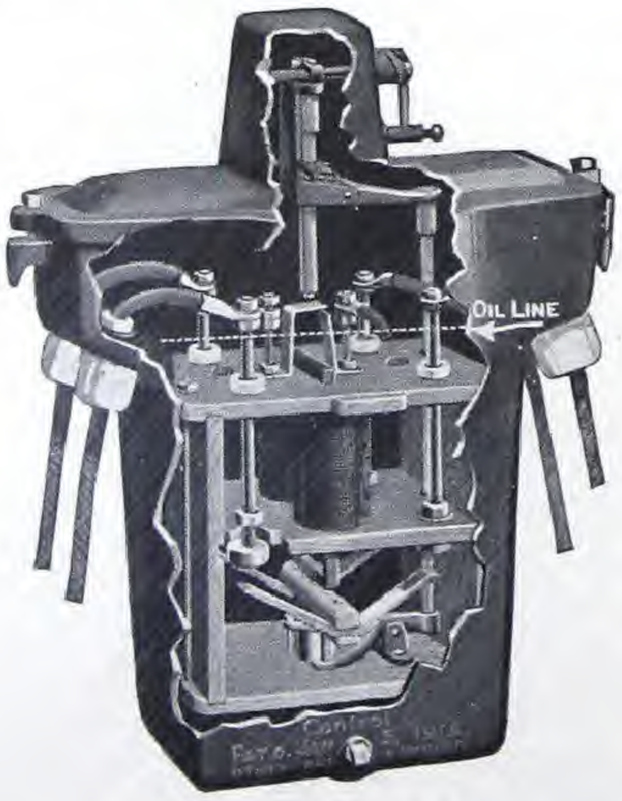
Capacity in Kw.	Dimensions in Inches A	B	C	D	E	F	G	H
2	34¼	23½	33¼	23¾	14¾	18	3½	18
5	34¼	23½	33¼	23¾	14¾	18	3½	18
7½	39¾	25	35¾	26¼	16¼	20½	3¾	21
10	39¾	25	35¾	26¼	16¼	20½	3¾	21
15	44¼	31	39¾	30¼	22¼	24½	3¾	25
25	56	39	48	36¼	24¼	30½	3	40

*Net weight includes transformer without oil.
†Shipping weight includes transformer boxed for shipment, complete with hanger irons and oil in container.
‡Fuse blocks are not included in this price. (See Style Number Index for Style Nos. 287325 or 147190.)
§R.C.O.C. switches can be furnished for special voltages, frequencies, etc.
¶The standard regulator operates on 60-cycle circuits. Regulators for other frequencies can be furnished on order.
Oil weighs approximately 7 pounds net per gallon and 8½ pounds shipping.
Dimensions are for reference only. For official dimensions apply to the nearest district office.

R.C.O.C. REMOTE-CONTROL OIL SWITCHES

For 60-Cycle Service§

The R.C.O.C. system has been devised for the remote control of outdoor lighting. R.C.O.C. switches operate on the solenoid principle. The solenoid winding may be energized from either a series or multiple street circuit already installed.



The general practice of street lighting calls for lower intensities after midnight than before. The reduced intensities are usually obtained by turning off a number of lamps at midnight leaving others to burn all night. The use of R.C.O.C. switches makes it possible to operate long or short hour lamps on either series or multiple circuits. Besides assuring absolute automatic remote control from the power house, they effect a considerable saving in cable and control lines and conserve central station floor space in many cases.

With these switches, it is possible to cascade constant-current transformers or the point of feed in a White Way lighting system. Ninety-five per cent of all outdoor lighting installations can be controlled by the R.C.O.C. system. Street lighting control problems should be referred to the nearest Westinghouse district office.

R.C.O.C. switches have no springs, require no winding, are not time clocks but are always on time.

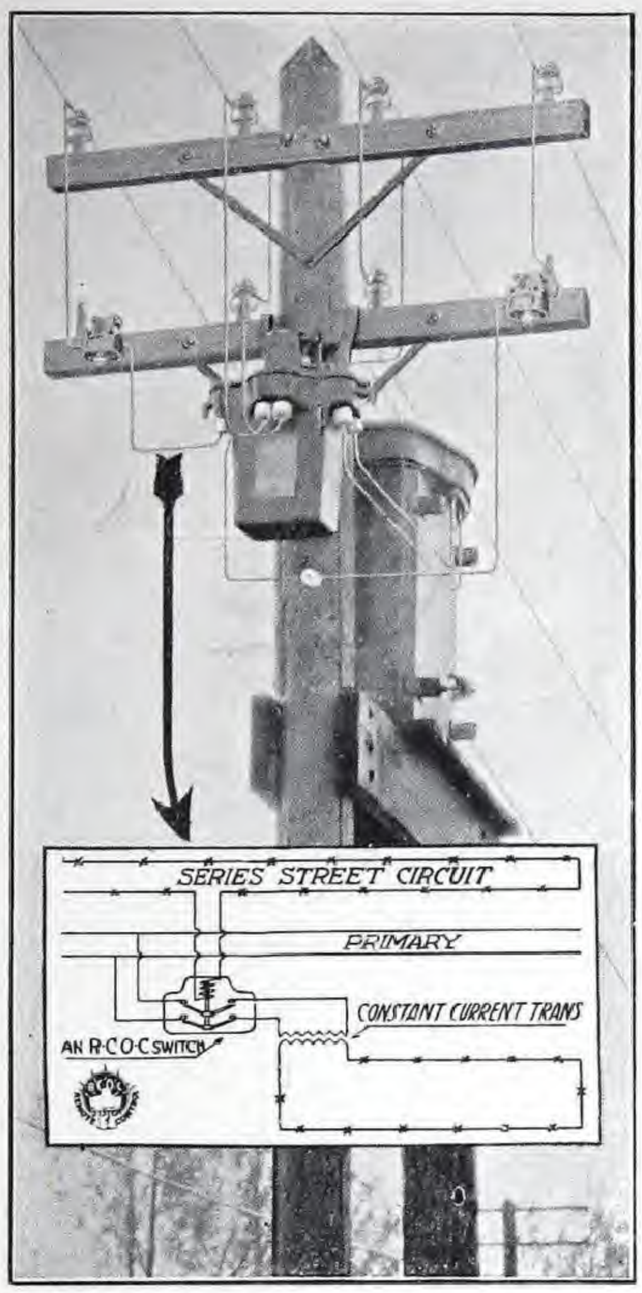
The combination lever attachment, which is now an integral part of all R.C.O.C. switches, makes it possible by simply changing the position of a lever to close series circuits by hand in daylight to locate burnt-out lamps; close series circuits by hand at night in case the circuit should open or other trouble develop, thus avoiding outages while the circuit is being restored to normal operation; cut out of service any load; restore to normal sequence any lamp groups whose regular stepping has been thrown out of order by lightning or other such cause.

Special oil that will not congeal at a temperature of 40 degrees below zero is furnished with each switch. To assure best results no other oil should be used.

All R.C.O.C. switches are guaranteed for one year against all defects of material or workmanship and lightning burnouts.

R.C.O.C. REMOTE-CONTROL OIL SWITCHES—Continued

STANDARD R.C.O.C. SWITCHES—SINGLE-THROW



R.C.O.C. switches have current-carrying capacity as follows: 75 amperes per pole at 220 volts, 30 amperes per pole at 3300 volts and 15 amperes per pole at 6600 volts.

TYPE AN

Type AN switches are used where the load controlled is to have the same lamp hours as the solenoid control circuit.

Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
AN-14-S	6.6	6.6	3300	137	176	$250 00
AN-13-S	7.5	7.5	3300	137	176	250 00
AN-14-L	6.6	6.6	6600	159	202	270 00
AN-13-L	7.5	6.5	6600	159	202	270 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Switch Capacity Volts	Approx Wt., Lb. Net	Ship.	List Price
AN-18-L	...	110	6600	159	202	$270 00
AN-21-L	...	220	6600	159	202	270 00
AN-26-L	110	...	6600	159	202	270 00
AN-30-L	220	...	6600	159	202	270 00

TYPE ANS

Type ANS switches are used as single-pole switches having four breaks under oil where the solenoid winding is energized from a multiple circuit to control the loop of a series circuit or long and short-hour lamps on a series circuit.

Style No.	Control Circuit Volts D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
ANS-18-L	...	110	6600	159	202	$280 00
ANS-21-L	...	220	6600	159	202	280 00
ANS-26-L	110	...	6600	159	202	280 00
ANS-30-L	220	...	6600	159	202	280 00

TYPE MN

Type MN switches are equipped with a locking device which alternately opens and closes at the will of the power house operator by winking the solenoid control circuit.

Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
MN-14-S	6.6	6.6	3300	137	176	$268 00
MN-13-S	7.5	7.5	3300	137	176	268 00
MN-14-L	6.6	6.6	6600	159	202	288 00
MN-13-L	7.5	7.5	6600	159	202	288 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Switch Capacity Volts	Approx. Wt., Lb. Net	Ship.	List Price
MN-18-L	...	110	6600	159	202	$288 00
MN-21-L	...	220	6600	159	202	288 00
MN-26-L	110	...	6600	159	202	288 00
MN-30-L	220	...	6600	159	202	288 00

2-IN-1 R.C.O.C. SWITCHES

2-IN-1 R.C.O.C. switches are used only when the load to be controlled is 600 volts or less. Two switches of the same form or a combination of the AN and MN types are contained in the same case. This conserves space in manhole and both space and weight on pole top. They are made with single pole only. The capacity of the 2-IN-1 switches is 100 amperes at 220 volts.

TYPE MA

The type MA switch is a combination of one AN and one MN type switch. It is equipped with a locking device operated by momentarily interrupting the solenoid control circuit. This makes it possible to discontinue certain lamps before the circuit used to energize the solenoid is discontinued.

Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
MA-14-L	6.6	6.6	164	207	$394 00
MA-13-L	7.5	7.5	164	207	394 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
MA-18-L	...	110	164	207	$394 00
MA-21-L	...	220	164	207	394 00
MA-26-L	110	...	164	207	394 00
MA-30-L	220	...	164	207	394 00

Order by Style Number

R.C.O.C. REMOTE-CONTROL OIL SWITCHES—Continued

TYPE AA

The type AA switch is a combination of two type AN switches.

Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
AA-14-L	6.6	6.6	164	207	$378 00
AA-13-L	7.5	7.5	164	207	378 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
AA-18-L	...	110	164	207	$378 00
AA-21-L	...	220	164	207	378 00
AA-26-L	110	...	164	207	378 00
AA-30-L	220	...	164	207	378 00

TYPE MM

The type MM switch is a combination of two type MN switches. It is equipped with a locking device similar to that on the type MA switch.

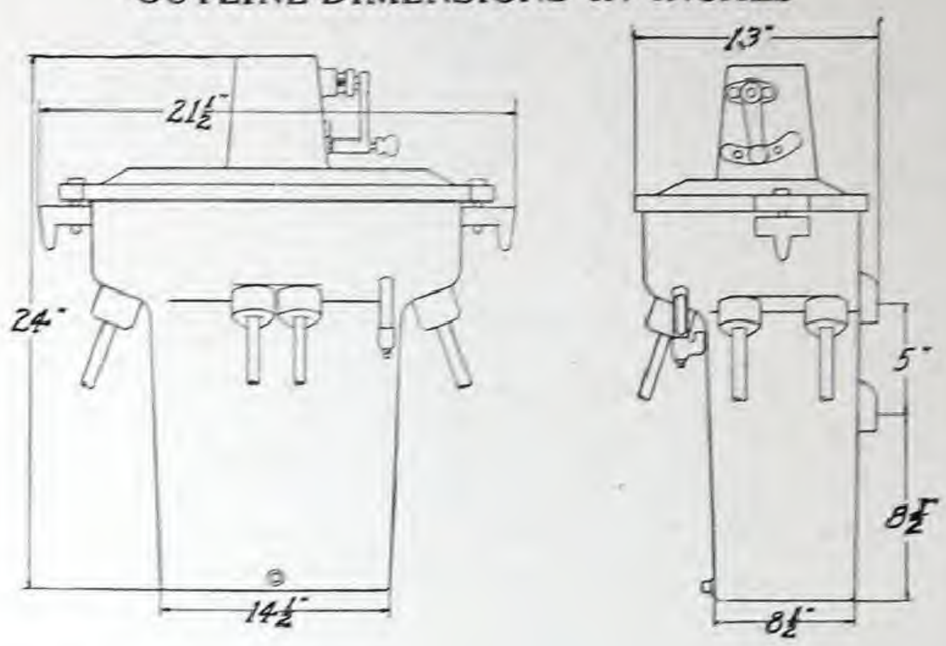
Switch Energized from Series Circuit Rated in Amperes

Style No.	Control Circuit Amperes D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
MM-14-L	6.6	6.6	164	207	$410 00
MM-13-L	7.5	7.5	164	207	410 00

Switch Energized from Multiple Circuit Rated in Volts

Style No.	Control Circuit Volts D-c.	A-c.	Approx. Wt., Lb. Net	Ship.	List Price
MM-18-L	...	110	164	207	$410 00
MM-21-L	...	220	164	207	410 00
MM-26-L	110	...	164	207	410 00
MM-30-L	220	...	164	207	410 00

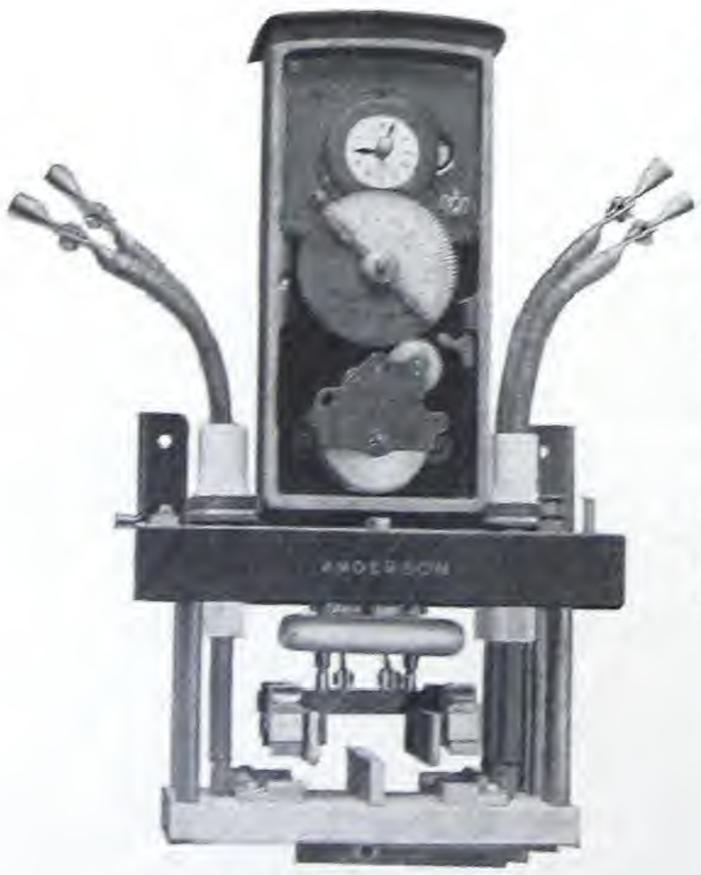
OUTLINE DIMENSIONS IN INCHES



Prices include switch complete with hanger irons and oil.
For Subway type case, furnished only in large size, add $80.00 to the list price of any switch.
All prices are f. o. b. South Bend, Indiana.
Dimensions are for reference only. For official dimensions apply to nearest district office.

TYPE L TIME SWITCHES

Two or Three-Pole, High Tension, Oil Break



Type L Time Switch

This type of switch is constructed for controlling alternating-current circuits up to, and including, 6600 volts, and is furnished either two or three-pole. It is an oil-break switch having a high grade propelling mechanism and time piece.

This apparatus is used extensively in connection with the pole-type, constant-current regulator, where lamps are connected permanently to the secondary coil of the regulator.

When these switches are installed on poles, or other exposed places, additional weather protection should be provided. For this purpose a wooden housing with porcelain insulators can be supplied at $16.00 list price, additional.

LIST PRICES

Style numbers and list prices cover complete apparatus, including oil chamber and sufficient oil to fill to the working level.

Capacity Amperes	Number of Poles	Dimensions in Inches Length	Width	Depth	Approx. Wt., Lb. Net	Shipping	Style No.	List Price
For Potentials Not Exceeding 3300 Volts								
25	2	20	10½	7¼	44	65	W-11039	$120 00
50	2	20	10½	7¼	45	65	W-11040	130 00
25	3	20	14	10	50	75	W-11043	144 00
50	3	20	14	10	50	75	W-11044	160 00
For Potentials Not Exceeding 6600 Volts								
25	2	20	11½	8	50	75	W-11080	200 00
50	2	20	11½	8	50	75	W-11081	220 00
25	3	21	15	10	60	90	W-11084	240 00
50	3	21	15	10	60	90	W-11085	270 00

Type L switches operate in primary circuits only. If desired, type M switches, which operate in both primary and secondary circuits, can be supplied. Prices will be quoted upon request.

Order by Style Number

AUTO-TRANSFORMERS

The demand for increased efficiencies in lighting systems led the lamp manufacturers to produce series lamps, which operate at 15 and 20 amperes. In order that these lamps might be operated on standardized series circuits of 6.6 or 7.5 amperes, auto-transformers were designed for use with each lamp. The current is taken from the line at either 6.6 or 7.5 amperes and delivered to the lamp at 15 amperes for 4000-lumen lamps and 20 amperes for 6000 and 10,000-lumen lamps. Mogul base multiple sockets should be used.

In some localities, it has been found desirable to distribute power on low voltage multiple circuits and at the same time make use of the high current series lamps. The 6000-lumen 110 and 220-volt multiple coils listed below make this possible. They may be connected on 110 or 220-volt mains and by the selection of the proper tap, will deliver 15 or 20 amperes to the 4000 and 6000-lumen series lamp. This application, however, has certain disadvantages in that the series lamps are not regularly selected for uniformity in voltage and unless careful tests are made to determine the proper tap on the coil for each lamp there is a possibility of considerable variation in lamp current, resulting in low efficiency or short life. However, where lamps have been especially selected for this purpose, satisfactory results have been obtained.

Style number and list price include bare coil without socket or mounting details. Series coils have taps for either 6.6 or 7.5-ampere line current and each coil has a tap for the next smaller lamp as well as the lamp for which it is rated. Coils are for 60 cycles. Prices for special frequencies will be furnished on request.

Lamp Lumens	Approximate Watts	Primary	Secondary	Style No.	List Price
		60-Cycle Auto-Transformers			
4000	200	6.6–7.5 Amp.	15	250220	$ 8 00
6000	300	10 Amp.	20	353394	10 25
6000	300	4 Amp.	20	222268	10 25
6000– 4000	300	6.6–7.5 Amp.	20–15	250221	10 25
10000	500	10 Amp.	20	348784	13 75
10000– 6000	500	6.6–7.5 Amp.	20	250222	13 75
10000– 6000	500	10 Amp.	20	409887	13 75
15000–10000	750	6.6–7.5 Amp.	20	302537	15 00
6000– 4000	300	220 Volts	20–15	302535	12 50
6000– 4000	300	110 Volts	20–15	302536	12 50
		25-Cycle Auto-Transformers			
6000–4000	300	6.6–7.5 Amp.	20–15	229711	15 00
10000	500	6.6–7.5 Amp.	20	229712	18 00
		50-Cycle Auto-Transformers			
6000–4000	300	6.6–7.5 Amp.	20–15	353201	13 75

REACTANCE COILS

The single-phase reactance coils listed below are mounted in streethoods and post tops when an adjuster socket system is used to maintain constant current. The style numbers given are for 60-cycle coils, without sockets or mounting details. Prices for complete fixtures are given on other pages.

Lamp Lumens	Current Amperes	Style No.	List Price
	60-Cycle Reactance Coils		
320–400–600	6.6	219160	$ 8 00
800–1000	6.6	219161	9 00
2500	6.6–7.5	262293	11 00
4000	6.6–7.5	262294	13 00
2500	6.6	219164	15 00
600–800–1000	4	120375	10 00
2500	4	120377	12 00
4000	4	156052	15 00
	25-Cycle Reactance Coils		
400–600	6.6	219164	15 00
800–1000	6.6	262293	11 00
1000	4	131320	12 00
2500	4	131322	15 00

Order by Style Number

SAFETY COILS

For Indoor and Outdoor Service on Series A-c. Circuits

FIG. 1—REAR VIEW OF TYPE SK (OIL-INSULATED TYPE) SHOWING METHOD OF ATTACHING HANGER IRONS

FIG. 2—TYPE MA (DRY-TYPE ½ AND 1 KV-A.)

FIG. 3—SAFETY COILS IN SHEET-STEEL CASE (GUM-FILLED)

FIG. 4—SAFETY COILS IN SHEET-STEEL CASE (GUM-FILLED)

It is often desirable to make an installation of lamps where the potential of the series arc or incandescent circuit—the only circuit available—is too high for the application in question and the cost of running a multiple circuit from the central station would be prohibitive.

For such a proposition, Westinghouse safety coils are the economical solution. They are especially useful on installations as follows:

1—Where a series lighting system is desirable but high potentials are impracticable:

(a.) On side streets or alleys where to run the main series circuit would require a new pole line. The comparatively low voltage safety-coil circuit can often be run on an existing telephone pole line.

(b.) On bridges and in subways where the high potential of the regular series circuit is prohibitive.

(c.) For lighting of fire-alarm, police and letter boxes, where high potentials so near the ground would be dangerous.

2—Where a few lamps are wanted in a building and a multiple circuit is not available.

3—Where large lamps of high current must be operated from high-voltage series circuits such as white-way posts and pendent fixtures on mast arms having long loops.

Operation

The primary of these coils is connected in the regular series circuit, while the secondary supplies the lower potential series circuit. Regular series lighting fixtures (such as those with film-cutouts) should be used, except where the secondary voltage does not exceed 200 volts, in which case the puncturing of films is unreliable and multiple sockets may be used.

Safety coils of 2 kilowatts and less may be operated continuously on open circuit without injury; those of larger size will operate two hours without injury.

Film Protective Device—To prevent damage in case of an accidental open circuit in the secondary winding, a film protective device is recommended. This device is equipped with a film which, when connected across the secondary terminals of the safety coil, punctures under the open circuit voltage and thereby establishes a short circuit.

Construction

These safety coils are series transformers insulated for high voltages (being tested for 20,000 volts for one minute between windings and between windings and iron).

In Sheet-Steel Case—The safety coils of 500 watts or less are of the core-type construction with a case of sheet-steel, gum-filled. For manhole service, outlets of a heavy pipe are provided, so tinned that a joint with lead-covered cable may be wiped to them. Small feet or mounting straps for supporting the transformer in the base of the hole are conveniently arranged. For overhead service, the leads are brought out through the bottom in porcelain bushings and a strap is provided on the side for mounting on a pole.

Type MA (Dry-Type)—The 1 and 2 kilowatt size are air cooled and of the same construction as the type MA current transformers. The magnetic circuit, with laminations exposed to the air, is clamped between cast-iron end-caps which protect the windings, the leads extending downwards through suitable bushings in the bottom end-cap. The coils are impregnated with an insulating compound which thoroughly seals up joints between the laminations and end-caps.

Type SK (Oil-Insulated)—The larger capacities of these coils are oil-insulated and have the same form of construction as the type SK distribution transformers (see "Section 4-A Distribution Transformers").

SAFETY COILS—Continued

Style number and list price include safety coil and (for the oil-insulated) the necessary oil and hanger irons for pole mounting.

FOR 6.6-AMPERE CIRCUITS, LINE VOLTAGE OF 10,000

Capacity Kv-a.	Lamp Lumens	Fig. No.	Secondary Amperes	Secondary Volts	Approx. Wt., Lb. Net	Approx. Wt., Lb. Shipping	Style No. Hanger Irons	Gal. Oil	Style No.	List Price
In Sheet-Steel Case (Gum-Filled)										
.075	.....	3	6.6	11	18	38	.....	....	352320	$25 00
.450	.....	3	6.6	68	28	48	.....	....	352321	42 00
.220	4000	3	15	14.8	20	40	.....	....	352322	28 00
.316	6000	3	20	15.5	28	48	.....	....	352323	30 00
.518	10000	3	20	25.9	30	50	.....	....	352324	41 00
.816	15000	3	20	37.5	35	55	.....	....	352443	45 00
1.30	25000	3	20	60.6	40	60	.....	....	352444	48 00
.075	.....	4	6.6	11	18	38	.....	....	352325	25 00
.450	.....	4	6.6	68	28	48	.....	....	352326	42 00
.220	4000	4	15	15.3	20	40	.....	....	352327	28 00
.316	6000	4	20	15.5	28	48	.....	....	352328	30 00
.518	10000	4	20	25.9	30	50	.....	....	352329	41 00
.816	15000	4	20	37.5	35	55	.....	....	352330	45 00
1.30	25000	4	20	60.6	40	60	.....	....	352331	48 00
Type MA (Dry-Type)										
1.00	.....	2	6.6	152	56	65	.....	....	249428	65 00
2.00	.....	2	6.6	304	93	110	.....	....	249430	83 00
Type SK (Oil-Insulated)										
5.00	.....	1	6.6	760	230	333	109713	8	249433	145 00
10.00	.....	1	6.6	1520	346	508	109713	11½	249435	230 00

OUTLINE DIMENSIONS IN INCHES

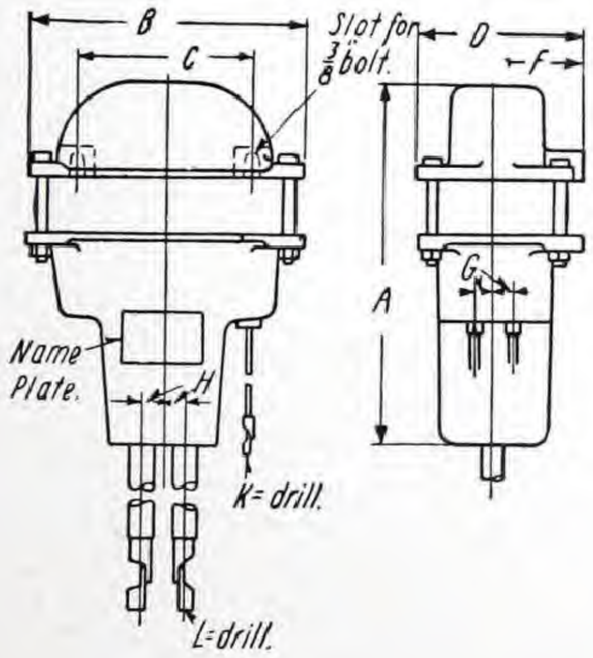


FIG. 5

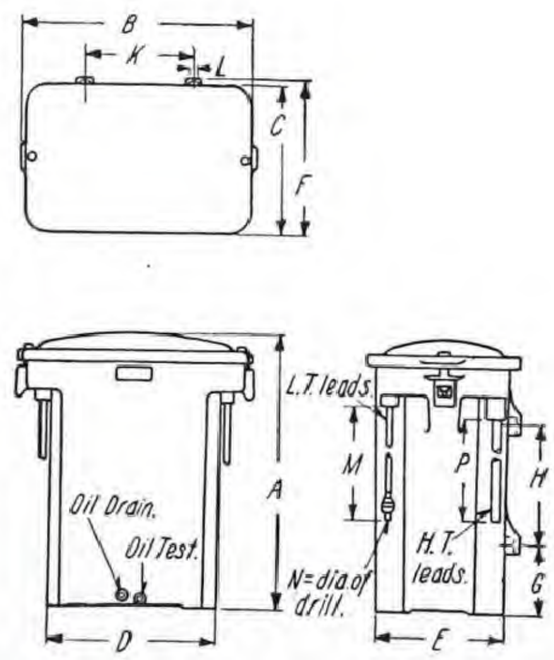


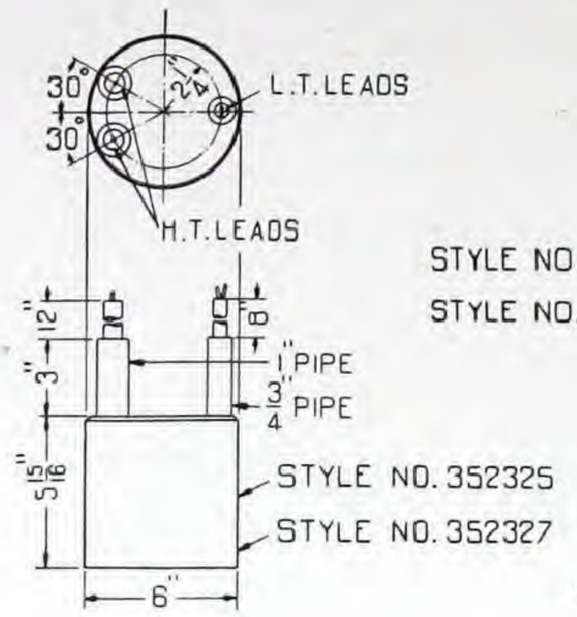
FIG. 6

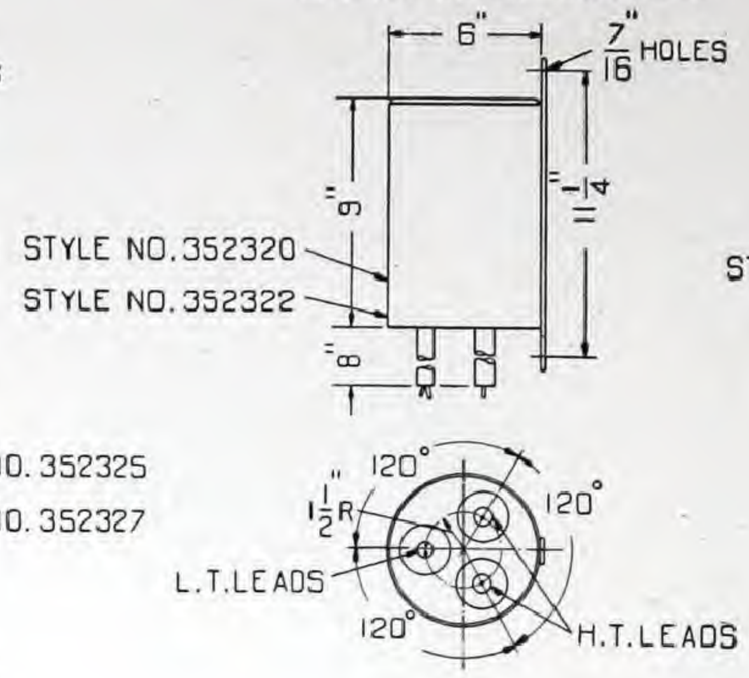
Style No.	Kv-a.	Fig. No.	Dimensions in Inches A	B	C		E	F	G	H	K	L	M	N	P
249428	1	5	15 15/16	9 13/16	6 1/8	5 15/16	....	3 1/8	5/8	3/4	5/32	1/4	..	....	..
249430	2	5	15 1/2	11 1/4	7 7/8	7 13/16	....	4 1/2	3/4	3/4	5/32	1/4	..	....	..
249433	5	6	23 1/8	19 3/4	12 5/8	14 1/4	10 7/8	13	6 1/8	10	9	9/16	18	.168	24
249435	10	6	25 1/2	22 3/8	14 7/8	15 3/4	12 7/8	15 1/4	3 3/8	16	11	9/16	21	.168	24

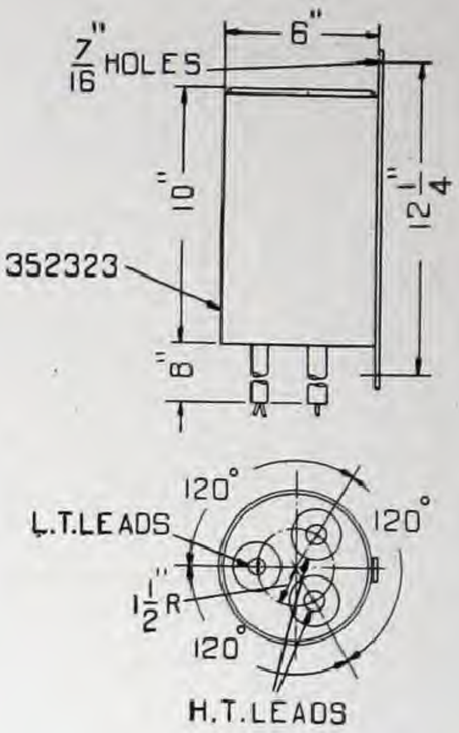
Dimensions are for reference only. For official dimensions apply to the nearest district office.

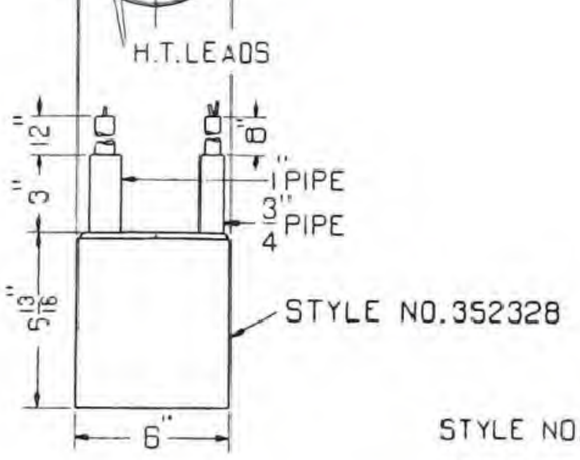
Order by Style Number

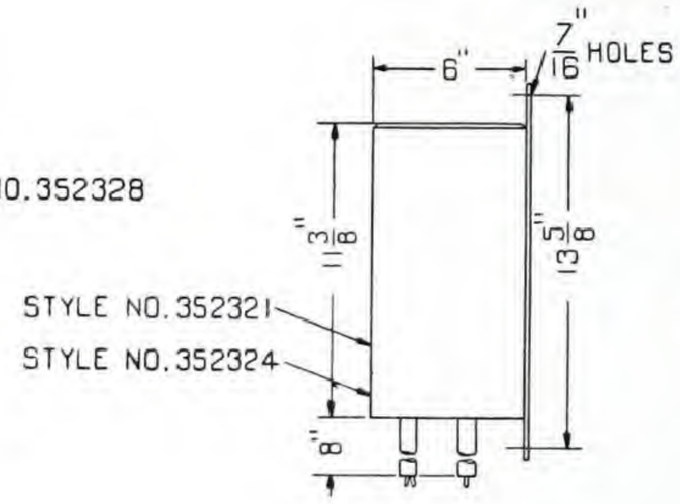
SAFETY COILS—Continued

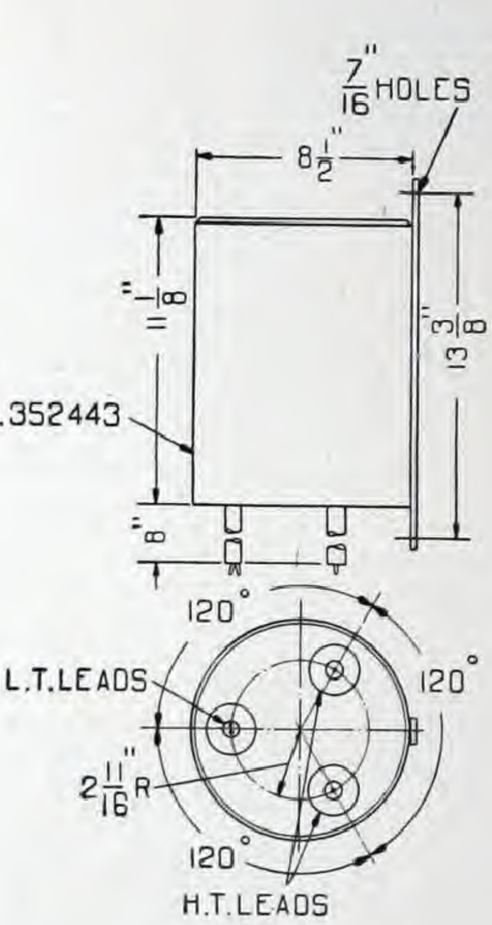


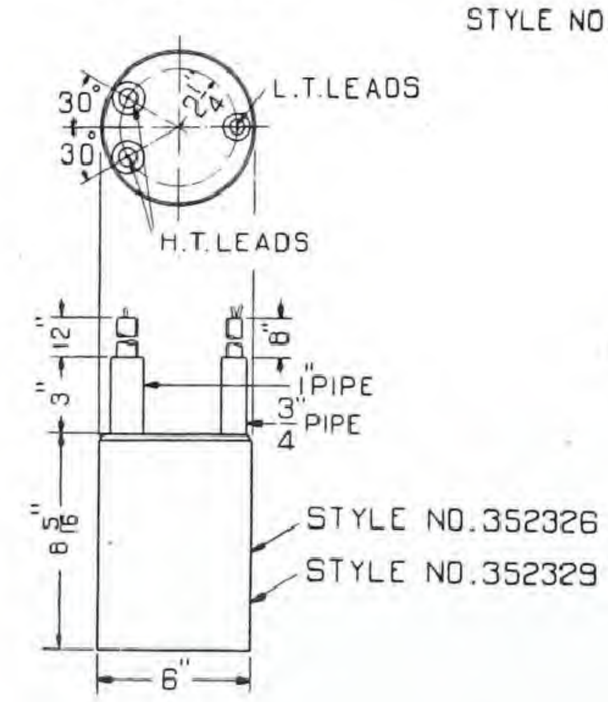


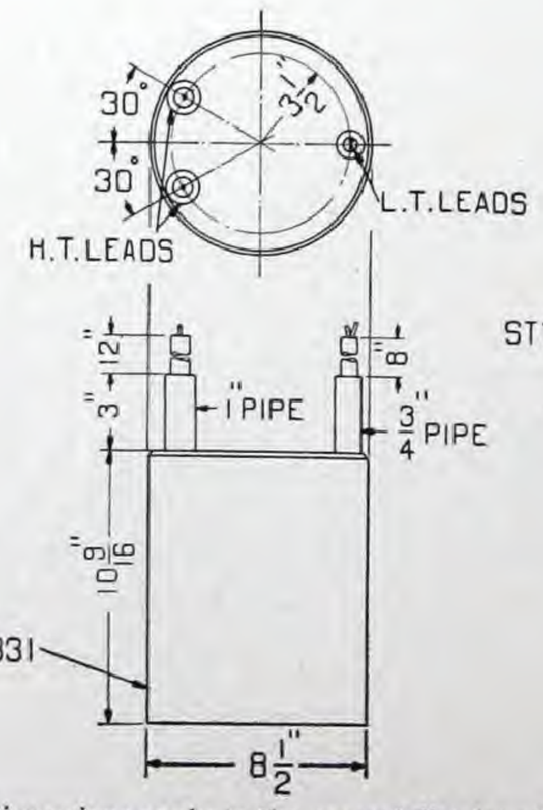


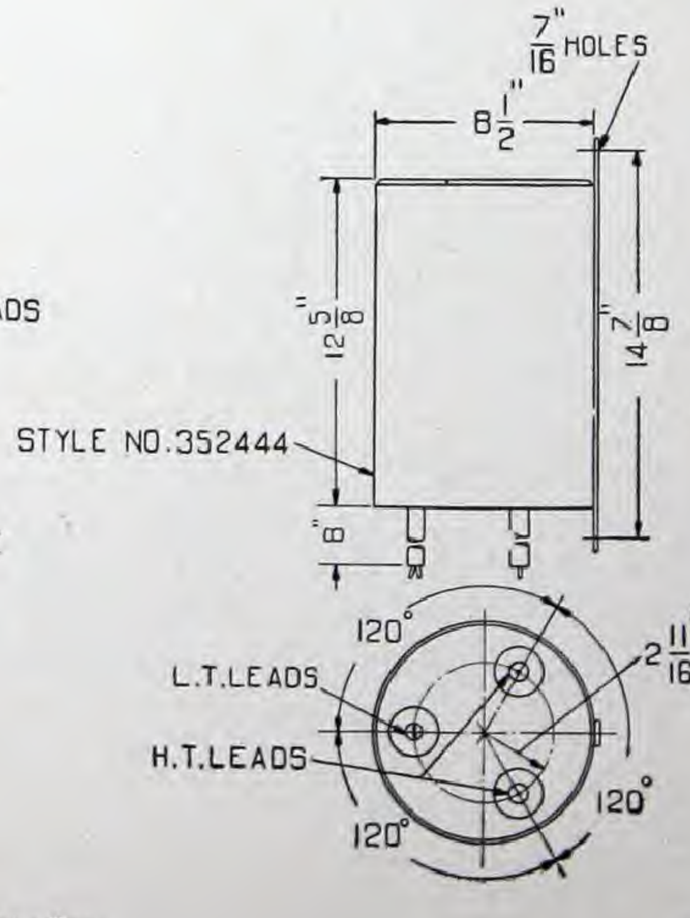


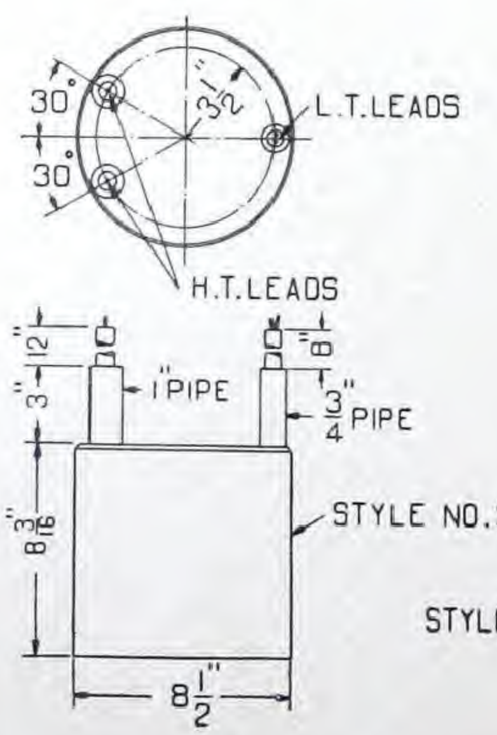










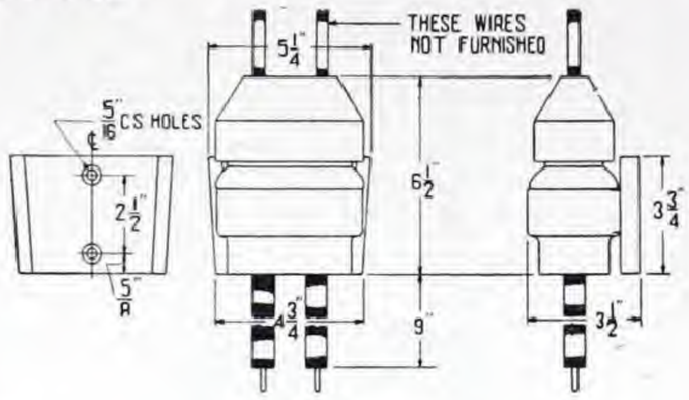


Dimensions are for reference only. For official dimensions apply to the nearest district office.

SAFETY COILS—Continued

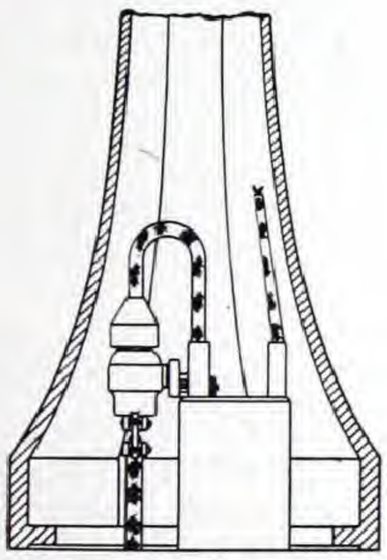
FILM PROTECTIVE DEVICE
For Type SK (Oil-Insulated) Safety Coils

The use of the film protective device is recommended to prevent the overheating of the safety coil in case of any accidental opening of secondary circuit.



Capacity Kv-a.	Secondary Amperes	Max. Closed Circuit Voltage	Approx. Wt., Lb. Net	Approx. Wt., Lb. Ship.	Style No. Film	Style No. Film Protective Device	List Price
5.00	6.6	750	5	10	353801	354100	$10 00
10.00	6.6	1520	5	10	353802	354100	10 00

COMBINED SAFETY COIL AND DISCONNECTING POTHEAD
For 6.6 Amperes, 60-Cycle Circuits



SAFETY COIL AND POTHEAD IN BASE OF STANDARD

COMBINED SAFETY COIL AND DISCONNECTING POTHEAD

PARTS FOR DISCONNECTING POTHEAD

In most up-to-date ornamental standard installations, it has been found that the advantages of both the safety coil and the disconnecting pothead are very desirable. To meet these requirements, the combination illustrated above has been designed.

The pothead consists of a cast-iron body with double bonding clamps for the cable and a disconnecting and short-circuiting switch enclosed in a porcelain case. It is attached rigidly to the case of the safety coil, and the combination is located in a position easily accessible through the door opening.

The two bonding clamps are so arranged that one of them bonds the steel armor, and the other the lead sheath of the underground cable, thus preventing the accumulation of static voltage, which might be injurious to the cable insulation. Cable connections are made to screw terminals in the porcelain case of the disconnecting switch, and the pothead body is filled with an insulating compound which thoroughly seals the joint.

The primary leads of the safety coil are connected directly to the removable cap of the pothead. The contacts are so arranged that the removal of the cap disconnects the coil from the line, and, at the same time, connects the two cable ends together, thus maintaining the continuity of the series circuit. A testing plug is provided with which the underground system can be subdivided and tested at any time without the necessity of cutting the cable. See page 888 for prices of pothead parts.

Capacity Kv-a.	Lamp Lumens	Secondary Amperes	Secondary Volts	Style No.	Approx. Ship. Wt., Lb., Each	List Price
.220	4000	15	15	352332	50	$36 00
.316	6000	20	16	352333	58	38 00
.518	10000	20	26	352334	60	48 00
.816	15000	20	40.83	352335	64	52 00
1.30	25000	20	65	352336	68	58 00

Dimensions are for reference only. For official dimensions apply to nearest district office.

Order by Style Number

HOW TO SELECT THE PROPER SOCKETS FOR ORNAMENTAL LIGHTING UNITS

ADJUSTABLE SOCKET SUPPORT

The type of lamp socket used in a street lighting system depends (1) upon the kind of distribution system and (2) upon the size of the lamp to be used.

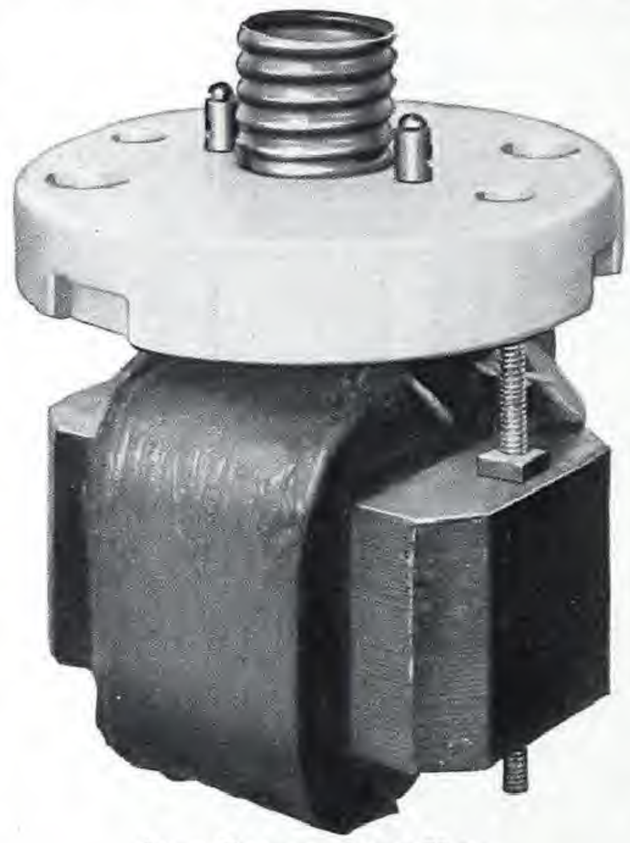
Multiple lamps for multiple systems have two sizes of bases—medium and mogul—and therefore require two kinds of sockets. Medium base sockets are used with multiple lamps of 200-watt size or smaller. Mogul sockets are used with multiple lamps of 300-watt size and larger.

All series lamps for series systems have mogul bases. The type of socket required depends upon the kind of distribution system on which they are used.

Straight series lamps are used on straight series circuits and require series film-sockets. Usually, an additional insulator is used in connection with series film-sockets.

When straight series lamps are used on an adjuster-socket system, reactance units are required. The reactance unit consists of a disc insulator, a mogul socket and a reactance coil assembled and electrically connected.

15 and 20-ampere series lamps require auto-transformer units or safety coils to step up the line current, which is usually 6.6 amperes, to the rated lamp current. The auto-transformer unit consists of a disc insulator, a mogul socket and an auto-transformer assembled and electrically connected. Both reactance units and auto-transformer units are arranged to fit lighting



AUTO-TRANSFORMER UNIT

GLOBE RING SHOWING 3 LUGS FOR MOUNTING SOCKET SUPPORTS OR COIL UNITS

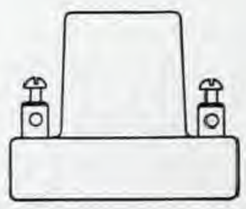
units without any kind of a socket support. To install them, it is only necessary to place the insulator in the proper position on the three lugs in the lower part of the lighting unit and make line connections to the binding posts.

All of the various types of sockets are arranged for use in any Westinghouse lighting unit and, therefore, are interchangeable. An adjustable socket support is furnished with each lighting unit on which both multiple and series sockets can be mounted. When reactance units or auto-transformer units are used, the socket support is not required.

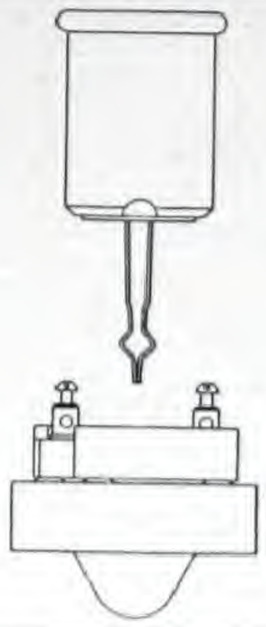
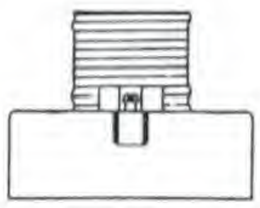
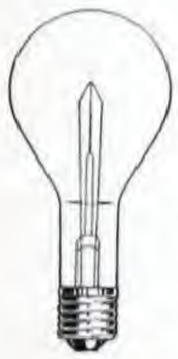
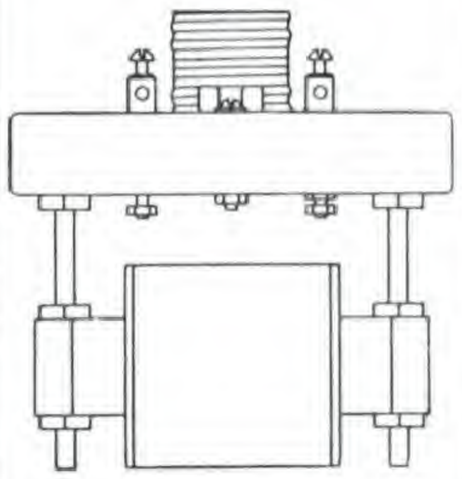
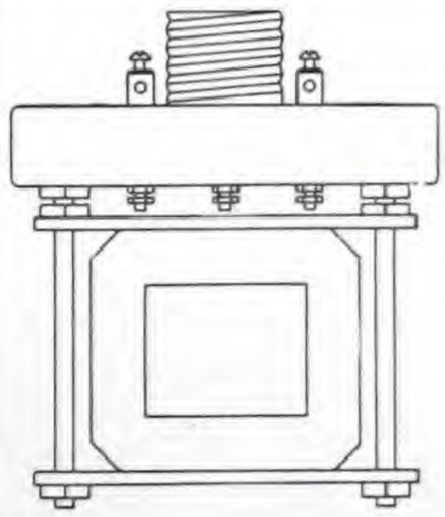
The following table shows the kind of socket used on the most common street lighting systems. The reactance units and auto-transformer units listed are designed for 60-cycle service. Units for other frequencies can be furnished when required.

List prices do not include lamps.

LIST PRICES

SYSTEM	LAMP		SOCKET		LIST PRICE
	Type	Size	Type	Style No.	
Multiple	 Medium Base	200 Watt or Smaller		334749	$0 95
Multiple	 Mogul Base	300 Watt or Larger		336179	95

LIST PRICES—Continued

System	Lamp		Socket		List Price
	Type	Size	Type	Style No.	
Straight Series	 Mogul Base	6000 Lumen or Smaller		352937 to 354179	$1 95
Series System with Safety Coils	 Mogul Base	4000 Lumen or Larger		336179	95
Adjuster Socket Series Systems (Reactance Coils)	 Mogul Base	1000 Lumen 2500 Lumen		335970 335971	12 95 13 95
Series System with Auto Transformers	 Mogul Base	4000 Lumen 6000 Lumen 10,000 Lumen		335627 335628 335629	10 95 12 45 15 95

Westinghouse Electric & Manufacturing Company

East Pittsburgh, Pa.

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